



## MIT Game Lab Exploring the potential of play

Since earliest recorded history, people of all ages and cultures have engaged in creative play. From the Olympics of ancient Greece to today's massively multi-player online games, human beings have consistently turned to play as a means of connecting with one another and the world around them. Through play, we encounter challenges with delight, we brave overwhelming odds with hope, and we conquer our world with imagination. **Play, as expressed in games, is the most positive response of the human spirit to a universe of uncertainty.**

Modern games have brought the power of play to many endeavors – from entertainment to education, art to activism, science to socialization, and more. At the **MIT Game Lab**, we **explore the potential of play in all these realms, particularly as it is amplified by new technologies.** Combining the inventiveness of MIT engineering and computer science, the pedagogy of the MIT Education Arcade, and the research and development of the Singapore-MIT GAMBIT Game Lab, the newly configured **MIT Game Lab** brings together scholars, creators, and technologists to teach, conduct research, and develop new approaches for applied game design and construction.

Ranked by the Princeton Review as the #2 Game Design Program in North America,<sup>1</sup> the **MIT Game Lab maintains MIT's role as a leader in the study, design, and development of games.** Moving forward, the Lab's goal is to explore, educate, and engage the public by creating groundbreaking games, interactive online courses, and new applications to real world challenges.

Uniting the resources and accomplishments of MIT's Education Arcade and the Singapore-MIT GAMBIT Game Lab, the **MIT Game Lab has a track record of developing games that demonstrate new research concepts and build on cutting-edge technology.** The productivity and leadership of the Game Lab staff is demonstrated by its many accomplishments and its growing list of awards.

To work with the MIT Game Lab, contact:

- Philip Tan, Creative Director, [philip@mit.edu](mailto:philip@mit.edu)
- Rik Eberhardt, Studio Manager, [reberhar@mit.edu](mailto:reberhar@mit.edu)

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<sup>1</sup> "Top Game Design Programs", The Princeton Review, March 1, 2012. MIT was ranked second for undergraduate and third for graduate game design programs.



## Research

Presented and published 113 research papers.

Published, edited, or contributed to 19 books.

Presented at 55 academic and 12 industry conferences.

Developed 55 games, 51 of which are available at <http://gambit.mit.edu/loadgame>

## Awards

Boston Indie Showcase 2010 – Dearth (finalist)

Boston Indie Showcase 2010 – Waker (finalist)

Foundations of Digital Games 2012 Research &  
Experimental Game Festival – elude

Games for Change ANZ 2012 – elude

Independent Game Festival 2012 –  
The Snowfield (student finalist)

Independent Game Festival China 2011 –  
Robotany (student winner)

Independent Game Festival China 2010 –  
Afterland (student finalist)

Independent Game Festival 2009 – Picopoke  
(finalist, Next Great Mobile Game)

Independent Game Festival 2008 – Backflow  
(finalist)

Indie Game Challenge 2011 – Symon  
(winner, Kongregate Award)

Indie Game Challenge 2010 – Waker (finalist)

Indiecade 2012 – A Closed World (finalist)

Indiecade 2011 – Improviso (finalist)

Indiecade 2009 – Akrasia (finalist)

Indiecade 2007 – AudiOdyssey

Indiecade 2007 – Backflow

Indiecade 2007 – The Illogical Journey of Orez

Indiecade 2007 – Wiip

Indiecade 2007 – Revolution

Meaningful Play 2012 – A Closed World  
(runner-up, Most Meaningful Game)

Meaningful Play 2012 – The Snowfield (finalist)

Meaningful Play 2012 – Movers & Shakers  
(finalist)

Meaningful Play 2010 – elude (winner, Most  
Meaningful Game; runner-up, Peoples  
Choice)

Meaningful Play 2010 – Yet One Word  
(winner, Best Overall Game; runner-up, Most  
Meaningful Game; runner-up, Best Student  
Created Game)

Meaningful Play 2010 – Afterland  
(winner, Best Student Created Game; runner-  
up, Most Innovative)

Jay is Games Best of 2009 – Rosemary  
(nominated)

Jay is Games Best of 2008 – Akrasia (nominated,  
best game or interactive puzzle)

Serious Games Showcase & Challenge 2012 –  
Movers and Shakers (finalist)

Serious Play Conference 2012 – The Snowfield  
(Gold award, Student competition)

Serious Play Conference 2012 – A Closed  
World (Bronze award, Student competition)

## MIT Game Lab Education

*Developed courses and taught 55 instructor-semesters for 1000 MIT students.*

- CMS.300/841 Introduction to Videogame Theory
- CMS.607/843 Theory & Practice of Player Research
- CMS.608/864 Game Design
- CMS.610/922 Media Industries and Systems
- CMS.611/6.073 Creating Video Games
- CMS.612/866/21W.767 Writing for Videogames
- CMS.616/868/21W.768 Social and Cultural Facets of Digital Games
- CMS.590J/863J Computer Games and Simulations for Investigation and Education
- CMS.600/996 Special Topic: Casual Games and Casual Players
- CMS.600/996 Special Topic: Making Deep Games
- CMS.S60 Special Topic: Unpacking “Super Serious” Serious Games
- CMS.S60 Special Topic: Games for Social Change
- CMS.602 Special Topic: Learning to play – playing to learn.

*Mentored undergraduate interns and research assistants.*

- 222 Singapore undergraduates and polytechnic interns
- 123 MIT undergraduates from EECS (79), CMS (29), Brain & Cognitive Sciences, Sloan School of Management, Math, Physics, Architecture
- 30 interns from Rhode Island School of Design
- Five interns from Berklee College of Music
- Additional interns from Wellesley, Harvard, Northeastern University, Boston University, Massachusetts College of Art and Design, and Brown University

*Developed competitions.*

- Boston/Cambridge site for Global Game Jam, hosted Januarys 2009 thru 2012
- Game jams hosted for the US Department of Labor and other organizations
- Zero Robotics 2011 competition for MIT AeroAstro’s SPHERES

*Produced instructional materials for OpenCourseware and TechTV.*



## MIT Collaborators

*The MIT Game Lab works with programs and research groups in MIT to apply the institute's innovation, technology, learning and assessment methodologies to games.*

Bernard M. Gordon-MIT Engineering  
Leadership Program  
Cambridge Science Festival  
AeroAstro: SPHERES group  
Center for Civic Media  
Computer Science and Artificial Intelligence  
Lab  
MIT Education Arcade/Scheller Teacher  
Education Program  
MIT Engineering Systems Division  
Humans and Automation Lab

Media Lab (Center for Future Storytelling,  
Personal Robots Group, Smart Cities)  
Open Documentary Lab @ MIT  
Mobile Experience Laboratory  
MIT Museum  
MIT Music Program  
Sloan Business in Gaming Conference  
Terrascope  
Technology Licensing Office

## Industry Engagement

The MIT Game Lab hosts regular guest speakers from the game industry, connects students to internship programs and jobs, provides temporary facilities for local developers, and organizes events for local game companies.





## To Support the MIT Game Lab

### Make a Donation

Donors are invited to support the teaching and research of the MIT Game Lab by making a tax-deductible gift of any amount or by contributing to the Lab's endowment. Endowment gifts may be designated for a named faculty chair (for a gift of \$5M), a postdoctoral fellowship (for a gift of \$1M), graduate student research assistantships, or operating support. Expendable gifts also support the Lab's annual operating budget, which is currently \$2M.

*All donors making an annual gift of \$50,000 or more are invited to:*

- Participate in an annual executive summit to discuss new research findings.
- Contact MIT and local students through MIT Game Lab alumni networks.
- Attend student presentations and showcases of final game projects.
- Send an employee as a visitor to the MIT Game Lab for up to three months.

### Sponsor Research

Companies, foundations, and research groups are also invited to propose game concepts to the MIT Game Lab for prototyping. Four to six concepts will be selected for prototyping each year. Each sponsor will have the right of first offer to a royalty-free, nonexclusive license to assets, source code, and playable prototypes developed on the sponsor's concept for \$300,000 a year. Prototypes developed by the MIT Game Lab will be made publicly available eighteen months after they are delivered to sponsors. During and after that period, the MIT Game Lab may publish papers on its work and continue development and testing on prototypes.

### Sponsor a Class or Competition

Organizations are invited to propose a class or competition to be held at MIT. The MIT Game Lab teaches 1-2 game development and design-oriented classes per semester and is looking for special topics to use for interesting design constraints. Sponsoring a class at a rate of \$100,000 would be used towards operating costs for the 4-month class (administrative costs, teaching assistants, lecturers, materials, etc...). Materials created by students in the class remain property of the students who created them. Sponsors would have access to meet and recruit students from the class.

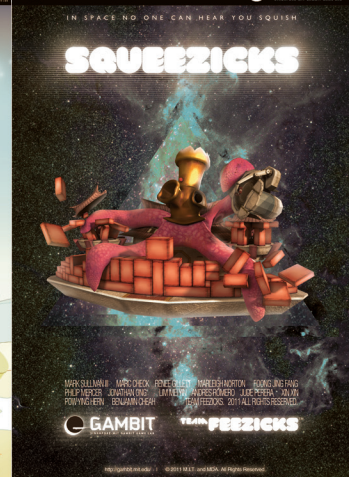
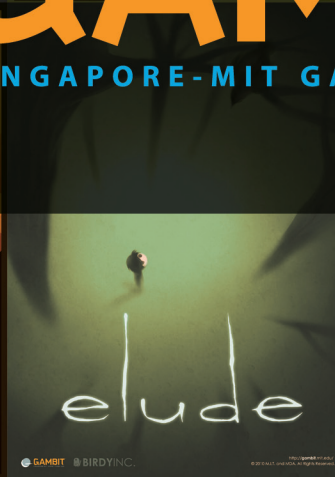
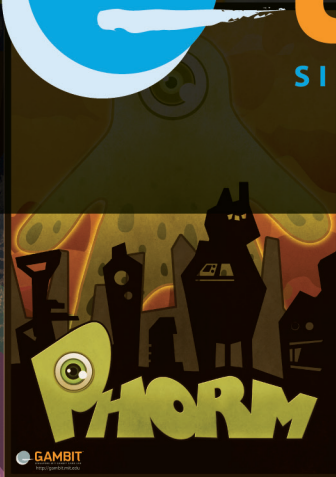
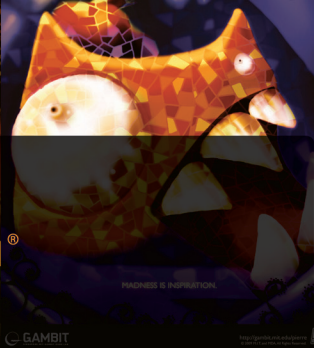
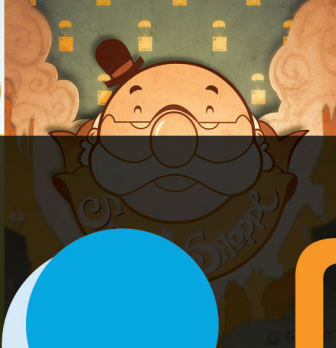
The MIT Game Lab is also looking to create special topic classes as competitions, held during the January Independent Activities Period. Competitions would be designed around topics your organization is interested in as a recruiting event. Sponsoring a competition at a rate of \$120,000 would be used towards both the development of the competition towards your goals as well as cover operating costs for the 1-month class (administrative costs, teaching assistants, materials, etc...).





# GAMBIT

SINGAPORE-MIT GAMBIT GAME LAB





**I**n 2006, Singapore's Media Development Authority (MDA) scrutinized its games industry and noted a growing gap.

While the city-state had succeeded in drawing top console-game producers—exemplified in 2006, when after more than a decade of expansion elsewhere, Electronic Arts chose Singapore as its Asian hub—it was under pressure to produce a workforce capable of staffing the hundreds of specialized roles involved in high-end game development.

Most of these large studios were not yet positioned to exploit the exponential growth in mobile phone use and the rise of casual games. Requiring smaller development teams and investment, local Singaporean companies attempted to make inroads in a brand-new sector of gaming, but many floundered due to inexperience with project scoping, team management, and new technology. Adherence to generic game conventions in Singapore-made games also revealed a great need for innovative game design.

Companies in Singapore fronted large amounts of money to build massively multiplayer online games (MMOG), a space dominated by specialists such as Blizzard Entertainment, Turbine Games, and NCsoft. The immense challenges of development, maintenance, and attracting a critical mass of online players meant that successes were few and far between.

Compounding Singapore's challenge was the exodus of a generation of homegrown talent. Young graduates were being drawn away by foreign companies offering the chance to work on the genres local industry didn't, or couldn't, develop.

All of these changes left the Singaporean games industry vulnerable.

The National Research Foundation of Singapore reached out to MIT, drawing on a decade-long relationship nurtured by the Singapore-MIT Alliance (mit.edu/sma). This partnership would result in US\$25 million in funding for a first-of-its-kind game research collaboration. It was launched the following year in both Singapore and the United States under the name "Singapore-MIT GAMBIT Game Lab."

**This brief report is about the U.S. side of the GAMBIT Game Lab experience. Its six years are a story of a committed team's success, the production of award-winning research, and the Lab's impact on how academia and industry think about the long-term potential of games.**

*The immense challenges of development, maintenance, and attracting a critical mass of online players meant that successes were few and far between.*

*Academia and industry have long had a somewhat problematic relationship. Academics shake their heads at the constraints imposed by the limitations and tastes of the popular market, and professionals in the industry consider the academics' view from the ivory tower to be unrealistic. Industry professionals are also too busy keeping their projects financially afloat to read dry academic papers.*

*GAMBIT aims to serve as an interpreter between academia and industry by creating playable, real-world demonstrations of the concepts and research being conducted in academia. GAMBIT's game lab provides a place for students, academics and industry professionals to work together to develop games that both expand the boundaries of what is done in games while still keeping a close eye on whether the games are financially feasible and, perhaps more importantly, are fun to play.*

From GAMBIT'S "Why a Game Lab?"

**T**he lab was envisioned first and foremost as a bridge between academia and industry, but when the MDA and MIT agreed on the new lab's mission and purpose, that vision was described in deceptively dry terms:

"Development of research and education collaborative programs."

"Training students in game research and development methodologies."

"Involve MIT students in the activities of the Initiative."

The reality was anything but dry. The U.S. and Singapore labs would have only five years to train more than 200 Singapore undergraduate, polytechnic, and art school students in every aspect and stage of game design—whether project management, audio design, 3D character modeling, or artificial intelligence—and to train almost all of those 200 students within the constraints of a packed (temporally and physically) eight-week summer program in Cambridge. (And that doesn't count American summer interns from New England schools like the Rhode Island School of Design, the Berklee College of Music, Brown University, and MIT itself.)

Meanwhile, throughout the academic year, the U.S. Lab's cadre of researchers was expected to develop new game studies courses, present top-tier work at international conferences, and publish in the best journals. Its professional staff would organize and promote public events, manage a sizeable number of personnel, and publicize every breakthrough. The Lab as a whole would have to prove its value to the games industry, here and abroad.

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The U.S. lab was formally housed within MIT's Comparative Media Studies (CMS) program. This placed Henry Jenkins, a CMS co-founder and a top scholar of media convergence—a field including new kinds of games—as one of the lead principal investigators, bringing with him the CMS mission of “thinking across media forms, theoretical domains, cultural contexts, and historical periods.” William Uricchio, CMS co-director, was also a lead principal investigator for GAMBIT and assembled a steering committee of both MIT and Singapore faculty to set the lab's research agenda. The lab also created space for recent CMS graduates and MIT alums to pursue new kinds of research.

Philip Tan, CMS '03, was tapped as the U.S. Lab's executive director. Coming from Singapore, CMS, and game research, Tan was well-equipped to lead what was essentially a startup. He was joined by Generoso Fierro and Rik Eberhardt. The three set up a space borrowed from MIT's Architecture department, in the center of the MIT campus, while a custom lab space was under construction. The staff grew quickly, including game designer Matt Weise and researcher Clara Fernández-Vara, both CMS '04 and specialists in game narrative and storytelling, and Geoffrey Long (CMS '07), who took on the new lab's communications duties. Beyond the 11 graduate research assistants and 177 short-term undergraduate researchers, Jason Begy (CMS '10) stayed on. Reversing the formula, Abe Stein started at GAMBIT as audio director and then became a CMS graduate student.

The Lab also attracted top professionals. Art director Jason Beene had worked with Nintendo, THQ, and Pixar. Interaction design director Marleigh Norton, technical director Andrew Grant, and development director Sara Verrilli were all MIT alums. Norton arrived with usability design skills honed through several previous roles, including at NASA. Verrilli had worked with Irrational Games, creators of Bioshock, while Grant had worked with DreamWorks Interactive. Postdoctoral researchers from universities worldwide would join the lab to develop games around their own research. In time, it became a web of faculty, young researchers, specialized staff, students, and outside advisors.

Together, this team would build a launch pad for prototypes.<sup>1</sup>

GAMBIT would make previously unimagined types of games that answered previously unthought-of research questions. It would have to do it in a way that engaged and challenged young students, seasoned faculty, a self-confident industry, and gamers at tables, on laptops, on consoles, and wherever fingers tapped on a mobile device.

That's exactly what they did.

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1 A full list of games and research questions available at <http://gambit.mit.edu/loadgame>

# Research Production and Influence

*When I first began working at GAMBIT, I started a research project on the casual massively-multiplayer online game Faunasphere. I needed some help and enlisted (then-master's student) Jason Begy to be my research assistant. Over the course of a year we witnessed the game's launch, its expansion onto Facebook, go through community development growing pains, and then, unexpectedly, shut down. To help us understand these massive changes and their place in game culture we've talked with the former residents of the game space, interviewed its community managers, and played the game ourselves. What started as a potential article has expanded into a book-length project and a long term collaboration between the two of us. GAMBIT helped us start that collaboration, which has now crossed countries and extended beyond the original life of the game we began studying.*

Mia Consalvo, past Visiting Associate Professor at GAMBIT  
Associate Professor at Concordia University  
Author of *Cheating: Gaining Advantage in Videogames*<sup>1</sup>

*Over 200 press mentions and generated more than 170 books, chapters, peer-reviewed journal articles, and conference papers. Such production is virtually unprecedented within a single games studies group.*

**L**ab affiliates—not including work they have published before or after their stay—have garnered over 200 press mentions<sup>2</sup> and generated more than 170 books, chapters, peer-reviewed journal articles, and conference papers.<sup>3</sup> Such production is virtually unprecedented within a single games studies group. The breadth is equally impressive, as seen in this handful of titles:

- A Casual Revolution: Reinventing Video Games and Their Players
- All Bang Bang, No Kiss Kiss? The Bond Figure and Video Games
- Serious Learning in Serious Games: Transformative Learning in Video Games
- The Key to Adventure Game Design
- Recursive Learning in Computer Games
- None of the Above: Interactive Dialogue without Multiple Choice
- Academic and Professional Game Development
- Addressing the Challenges of Relevant Gay Game Content
- Collective Artificial Intelligence for Next Generation Gameplay
- Convergence and Globalization in the Japanese Video Game Industry
- Building and Growing a Game Lab<sup>4</sup>
- Hate Speech in Game Communities
- Tackling the Human Condition in Video Games

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1 The single-word variant “videogame” has been left in place where used by others in publication titles, course names, and quotations.

2 <http://gambit.mit.edu/campaign/inthepress.php>

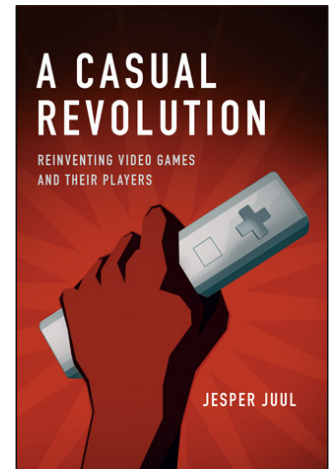
3 Many of these publications are available online: <http://gambit.mit.edu/readme/>

4 <http://mit.tv/xNsAtY>

- *AudiOdyssey*: an Accessible Video Game for Both Sighted and Non-Sighted Gamers

Genres. Adaptations. Cultural exchange. Modes of Learning. Narrative. Sexuality. Artificial Intelligence. Accessibility. Every one of these research themes have huge implications for where academia takes its work and, equally, where industry finds new opportunities.

To take one as an example, *A Casual Revolution*, a book written by visiting researcher Jesper Juul and published through MIT Press, became one of the first authoritative accounts of gamer stereotypes evolving from the obsessive, lone male in a dark basement to the more representative audience associated with the launch of the Nintendo Wii—and reminding all of us that the earliest popular video games weren't imposing, intense first-person shooters with three-year development cycles but brief pastimes such as *Pac-Man* and *Tetris*. Different from both the *Pac-Man* and *Halo* eras, modern casual games are built around players' lives rather than asking them to rearrange their lives around the games.



Juul would put this research into the 2009 summer program game *Pierre: Insanity Inspired*. He wanted to explore how players experience and deal with feedback and failure, a question to that point only half-answered by the intuition of past designers. His team described the game as “sometimes quite rude to players when they fail. Does this make us more or less motivated to continue playing?” Such questions have large, if complex, significance for casual games: for games that aren't supposed to seem to players like a time-sink, ones that can be picked up and left again at the start and end of a bus ride, how do you still challenge players? Are there best practices for how to ramp up a casual game's difficulty?

Two years later, the work of another researcher, Todd Harper, would drive one of the most talked-about GAMBIT games, *A Closed World*. Within the game itself, it never outright said it was about the personal experience of closeted homosexuality—or its painful, unplanned revealing, such as the case with the suicide of outed Rutgers University student Tyler Clementi—but the implications were clear:



*[You are] a young resident of a village just outside a forest that everyone says is a place of no return. Supposedly home to hungering demons and a beast that would destroy the village, the forest is forbidden and nobody knows what's on the other side. However, our hero's beloved—tired of the oppressive attitude of the villagers—decided to go there, as anywhere would be better than home. Now it's your turn to follow after. Are you willing to risk everything to find out what's on the other side?*

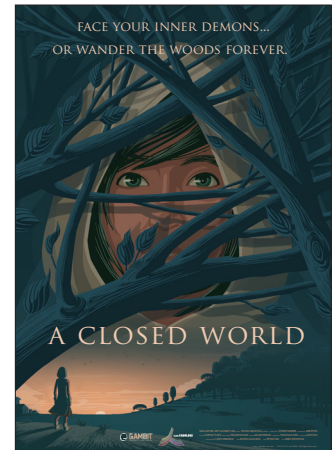


The research statement was more direct, calling out not just half-hearted approaches to queer content by best-selling video games but the excuses developers use to avoid issues of homosexuality altogether:

*Game designers and marketing professionals alike have cited a number of reasons for [avoiding queer content], ranging from a perception of institutional homophobia in game culture to a genuine desire on the part of game designers to “get it right” and create games with compelling queer content, rather than feeling that the element is merely “tacked on” in the end. The goal of this research was to present the design team with the challenge of creating a game that had this compelling queer content, and to observe the ideas and hardships they considered and encountered along the way, so that we could learn more about how to approach those challenges in other design contexts.*

The team’s efforts followed a path similar to other GAMBIT teams. Assisted by Abe Stein as game director, they worked hard over the summer and were rewarded with enthusiastic coverage. As a team of nine—a designer, a producer, a quality assurance lead, artists, programmers, and an audio designer—Harper’s group watched as *A Closed World* was lauded by major games outlets like Kotaku, Gamasutra, Indiegames.com, and PCGamer, while queer issues sites like AfterEllen praised it for diving into problems few thought could be addressed through the medium of games. The reviews also provided some excellent criticism that those like Stein were obliged to address in follow-up writings.<sup>5</sup> Why did the game force the player to choose whether they were male or female? If we’re going to explore queer issues in games, why immediately exclude bisexual or transgendered players? The constraints of a two-month summer program immediately generated critiques that others could learn from.

This was exactly the point, as we will see later in a section about the summer program.



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5 [http://gambit.mit.edu/updates/2011/10/reflections\\_on\\_a\\_closed\\_world.php](http://gambit.mit.edu/updates/2011/10/reflections_on_a_closed_world.php)



An influential but less public mission for the Lab was its commitment to classroom-based education, celebrated by the Princeton Review in 2010 when it named MIT the #2 school for undergraduate video game design.<sup>6</sup>

MIT Professor Eric Klopfer's games class dates back to 2004. Then by spring 2008, Comparative Media Studies instructors taught their first games classes. End-of-semester reviews gave high marks to CMS's "Computer Games and Simulations for Investigation and Education" (taught by Klopfer) as well as a new "Game Design" course, taught at both the graduate and undergraduate level by Fernández-Vara, Tan, Juul, and post-doctoral researcher Doris Rusch. Complementing the work getting underway at the Lab, these CMS offerings would grow to include the essential "Introduction to Videogame Studies", first taught by Rusch and CMS graduate student Eliot Pinkus; Fernández-Vara's "Writing for Videogames" course; the unique "Social and Cultural Facets of Digital Games" taught by Mia Consalvo; Tan and Verrilli's "Creating Video Games"; long-time CMS collaborator Chris Weaver's class on the business of video games; and, more recently, courses on video game theory, researching games players, sports video games, and a plethora of short for-credit and non-credit courses taught during MIT's January term.

The courses were bound to CMS's mission to combine theory and practice. Klopfer's course required the building of simulations. Weaver's class brought in industry leaders. "Creating Video Games" placed students into development teams. And in CMS's best-reviewed class ever—"Game Design"—students designed, developed, and tested non-digital games such as game shows, games of chance, card games, schoolyard games, board games, and role-playing games, all to understand the interaction and evolution of game rules.

Even courses that could easily have skipped over real-world applications stuck to the theory-plus-practice mission. Todd Harper's "Theory and Practice of Player Research", introduced in the spring of 2012, drew "on approaches from humanities, social science, and mass communication fields to inform and inspire student research," but it also required students to develop their own rigorous player study and collect and analyze real-world player data.

GAMBIT's educational mission was as valuable for researchers as for students:

*During my stay at GAMBIT as a researcher, I have taught courses which bridged theory and practice, as well as mentoring students in game development, during the year and through the summer. Even though they were all game-related, these courses were a constant challenge—being*

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<sup>6</sup> <http://content.usatoday.com/communities/gamehunters/post/2010/02/the-princeton-reviews-top-50-undergraduate-game-design-programs--/1>

*a pioneer in teaching certain subjects is exciting, but it also means that we have to find new paradigms and models to help us get them across.*

*Of the kinds of teaching I enjoyed most, mentoring students in game development was gratifying. The learning happened through making games, following the models of situated learning. I particularly enjoyed working side by side with the students, teaching by showing rather than lecturing.*

*My favourite course to teach has been “Writing for Videogames”, which I taught for three semesters. Technically a game design course focused on narrative games, students played games, read on different approaches to design and writing, and developed their own games, both individually and in teams. It was particularly rewarding because students tended to be more engaged and committed than in other game studies courses I taught. It may partly be due to the importance of narrative as a way to frame our understanding of the world, which attracted students who considered themselves gamers and those who were mainly interested in narrative. The focus of the course is aspects of game world building (space, character, challenges), and how each creates different opportunities for interaction.*

*At the beginning of the course, students brought specific ideas about game design and writing, which I promptly went on to defy by exposing them to games that they may not have been familiar with, including interactive fiction, point-and-click adventure games, and experimental games. Students played both exemplary works and not-so-good narrative games, so that they understood how different strategies of game design create both satisfying and frustrating ideas. Being pushed away from their comfort zone, students initially struggled with designing games that are different from what they were familiar with. In their final projects, students always demonstrated that they learned the core strategies of the course. They were games about topics that are not your usual videogame fare—from a therapist trying to unravel the traumas of a woman represented by cats in her house to a multiplayer game where players explored the dreams of a father about his daughter. They explored different mechanics, such as bargaining or learning a language. They improved their writing too, using fragmented information and interactivity as a way to encourage the player to explore the text. In the end, it was obvious most times that the students enjoyed the challenge. Later on, I observed that those who continued studying in Comparative Media Studies continued applying the strategies from the class, looking for novel topics and worlds to create innovative interactions.*

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Clara Fernández-Vara

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7 [http://mit.academia.edu/ClaraFernándezVara/Teaching/18592/Writing\\_for\\_Videogames](http://mit.academia.edu/ClaraFernándezVara/Teaching/18592/Writing_for_Videogames)

None of this, of course, is to imply that GAMBIT never had to face big challenges or sort through the day-to-day issues of a research lab.

It had to convince an industry that its novel approach to game research could pay figurative and literal dividends. On that count, GAMBIT only partially succeeded. It was able to establish a strong relationship with Boston-area independent games companies, supporting one another's experimentation and outreach. It was able to train students who went on to thrive in mainstream and niche game companies, both internationally and in Singapore. But that same industry relies on predictability; it resembles the priorities and cycles of the American film industry, except that gaming's professional independent scene is younger, with fewer resources to publicize, magnify, and reproduce successful experiments. Meanwhile, the Lab's mandate to develop theories that could be applied to the Singapore industry necessarily kept research focused away from the needs of the very biggest companies. Such limitations circumscribed the effect the Lab could have on industry, and even had an effect on its structure:

*My biggest challenge in running the studio was providing the materials and needs for a diverse staff student body. For staff, the needs of a researcher are different from a developer. For students, it's providing enough opportunities for those wanting to gain experience in game research and development. Luckily, the interests and research questions being asked by the Lab matched up well with student needs.*

*My biggest external challenge was in educating the local industry (be it game, software, health, etc...) in what our lab could provide for them, and how important game research is for their fields.*

Rik Eberhardt, GAMBIT Studio Manager

There were some solutions, nevertheless. Eberhardt went on:

*I ran multiple game jams<sup>8</sup> each semester, to encourage staff, students, and outsiders to make games and solve problems together. I opened the Lab to local industry for use as temporary work space, in return having them on-hand while classes were taught and our summer program was in session to provide impromptu advice and tips to our student game developers.*

If GAMBIT couldn't affect the industry directly, it could do so over time through the gaming community. Throughout the year, the Lab held frequent public events. "Friday Games at GAMBIT" was a mainstay of the academic year. Generoso Fierro produced dozens of short videos of play-testing,

*If GAMBIT couldn't affect the industry directly, it could do so over time through the gaming community. Throughout the year, the Lab held frequent public events.*



<sup>8</sup> Short, casual events, typically with small teams creating games around a theme.

in-house talks, and special events. Some of those special events included fundraising for charity, such as the “Complete Game-Completion Marathon,” which challenged people to play a game of their choice from start to finish, typically documenting with a live video feed their frustration, trash-talking, and, finally, joy.

There were one-time, open January term classes that gave researchers and staffers a chance to share their passions. Tan hosted “The Digital Game’s Value Chain” about how the industry works; Fernández-Vara, a board game workshop; another, designing games for autism research. There were tours of local game companies, design contests, 48-hour game jams, gaming documentaries, and a wealth of hands-on tutorials.

These events had a profound effect on how students and local industry came to value a lab dedicated to games.

*The Boston game community has benefited tremendously by having a relationship with GAMBIT. From hosting game jams that introduce people to game development to encouraging academic exploration, GAMBIT has influenced countless members of our community to pursue their passion for making games.*

Caroline Murphy, Boston Indies

*GAMBIT has been an amazing anchor for the Boston game development community. The GAMBIT staff were always generous with their time and with the space itself, and this helped us springboard into the strong, vibrant culture it now is. GAMBIT was among the first hosts for the Global Game Jam in Boston. I was the very first host for the GameLoop unConference series and has hosted innumerable other events over the years. Outside developers often comment that Boston’s game development culture and scene are among the best they’ve ever participated in—this is in no small part due to GAMBIT.*

Scott Macmillian, Macguffin Games and GameLoop, Inc.

Ultimately, the GAMBIT/CMS distinguishing feature, that is, combining theory and practice, placed big demands on its staff and researchers during the academic year. So a balance was struck: most of the theory—publishing, academic conference travel, public talks, teaching—took place from September to May, while the hard-core practice—creating and testing games—was largely the domain of the summer program.<sup>9</sup>

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<sup>9</sup> Game research continued throughout the year, and planning for the summer program’s investigations and student personnel was also a year-round effort.

*GAMBIT has been an amazing anchor for the Boston game development community. Outside developers often comment that Boston’s game development culture and scene are among the best they’ve ever participated in—this is in no small part due to GAMBIT.*



# The GAMBIT Summer Program



**R**ich Vreeland was a 2009 summer program alum who worked as the audio designer on *Waker* and *Woosh*. He is now a freelance interactive audio designer with clients ranging from independent game studios to large companies like Bungie, Ubisoft, and Hasbro:

*GAMBIT was a tremendously valuable experience for me. It was also quite challenging, and fun! The opportunity to be the audio lead on a project gave me a strong sense of responsibility that made me feel like I was valuable, as well as a sort of positive accountability that I thrived under. We all had an equal stake in our project, even outside of our own respective disciplines, and as a result, my internship there gave me my first glimpse into what it's like to be a game designer. They also passed on word of job opportunities to me after I left the program, and I can't understate how much the whole experience has meant to me, and how much it propelled my career forward.*



Vreeland's experience mirrors others', in the sense that the summer program's research can't be separated from its educational purpose. *Waker* and *Woosh*, in fact, combined them: they were games to research education. They were aimed at middle school and high school students as a complement to their physics classes. They functioned as an A/B test. *Waker* communicated physics principles through narrative play and art but *Woosh* through abstract puzzles. And while full research wasn't completed during the summer, subsequent work showed that *Waker*, with enhanced narrative elements, was more effective, valuable data for educators.

As with *Waker*, not all research happened in the summer. Often MIT students stayed on as undergraduate researchers through the summer and academic year.

Alec Thomson, a recent MIT graduate and soon to complete his engineering master's, worked during both the summer program and the academic year as a programmer, including summer '09 as a member of the team that developed *Dearth*—an especially challenging bit of game-based research. *Dearth* explored Markov Decision Problem solvers: a method for implementing artificial intelligence that doesn't rely on cumbersome "if/then" programming. Instead, it takes the rules of a game as an input from which the A.I. can use to create its own responses, even in novel situations. Note in his experience how tied to each other the research and educational missions are—not to mention Thomson's praise of GAMBIT's attention to social issues:

*I found GAMBIT when I was a freshman, almost by pure accident. Soon after, I started working as a UROP<sup>10</sup> and continued working with GAMBIT all the way through my graduation last spring. I consider myself incredibly lucky to have found GAMBIT early upon arriving at MIT and to have had an opportunity to work with the amazing people there. I can't count the number of times other upperclassmen discovered GAMBIT for the first time and lamented not finding the place sooner. This reinforces how lucky I was to discover it so quickly.*

*By the time I took my first software engineering classes at MIT, I had already been working at GAMBIT for more than two semesters and a summer session. I discovered that the kinds of skills these classes hoped to teach—team dynamics, leadership, good engineering sense, production skills, and iterative design—were already taught as an implicit part of every GAMBIT UROP. Needless to say that these classes were subsequently easier to consume and even more valuable as a result of my GAMBIT experience.*



10 An "undergraduate research opportunity," MIT's term for a for-credit internship.



*The staff at GAMBIT made a real effort to educate their students about social and equality issues surrounding games and the games industry, something I felt was severely lacking in the traditional engineering departments at MIT. As a result, not only do I feel that my time at GAMBIT prepared me to become a better game and software developer, I also feel it prepared me to become a better person.*

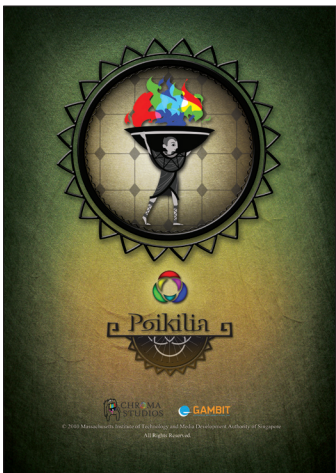
*The game industry needs more places like GAMBIT and I hope that like-minded alumni will work together to foster similar communities in the future.*

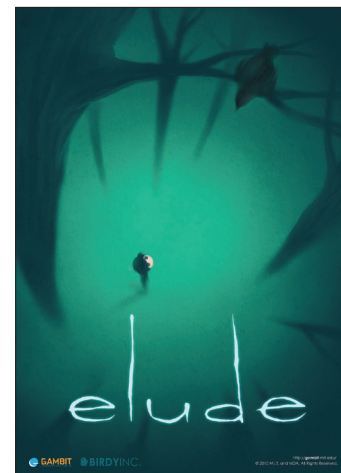
It's also a testament to Alec's success at GAMBIT that he left to pursue another internship: as a software engineer at Microsoft.

The summer program was nevertheless a learning experience for the GAMBIT staff. At first, teams were presented with a research question, and it was up to the team, with a staff game director at the helm, to spend the summer working through the challenges. This arrangement led to some mixed results, with the game concept, rather than the research question, too often driving development. So the second summer led to the breakthrough of embedding researchers in each team.

The subsequent games were much more conceptually provocative. Andrew Grant's *Robotany* gave players the tools to create their own artificial intelligence rules. Matthew Weise's *The Snowfield* proved you can create complex narrative without complex processing power—it became a finalist for the 2012 Independent Games Festival. *Squeezicks* brought together GAMBIT and the Boston Museum of Science to study soft-body physics—squishing, bending, twisting, stretching, and tearing 3D objects in real-time. Fernández-Vara and her team made *Stranded in Singapore*, a game to test procedurally-generated puzzles, that is, puzzles you can't play the same way twice; this resulted in a set of tools other developers can use in their own games. *Afterland*, with Konstantin Mitgutsch as product owner, explored how learning can be affected, improved, or frustrated by subverting video game conventions. *Elude* modeled depression; *Poikilia*, the teaching of color theory; *Symon* (an Indie Game Challenge winner), dream logic; *Yet One Word* and *Seer*, the Greek tragedies of Sophocles.

Outside developers took note of all these successes using embedded researchers. A get-it-done attitude needn't exclude—or even be hampered by—laser-like attention to, scrutiny of, and refining of a game's core question. The scope of a summer game may change over two months, but with a great research question, you don't have to compromise on innovation.





And all of this, too, supported GAMBIT's designated mission: to train a new generation of Singaporean game professionals. Undergraduates in every field—but especially going into the games profession—now have talents they need to develop through hand-on practice. They had to learn to work in teams with varied backgrounds. They had to meet inflexible schedules. They had to know how complex project systems works. A 2008 summer program alum sums up how GAMBIT did on these accounts:

*The rapid prototyping skills that I picked up at GAMBIT have proved especially valuable in developing and iterating new gameplay mechanics for the Assassin's Creed series of games. Working together with teammates of varied backgrounds, skills, and ability during the summer program has helped me integrate well with the large multicultural and multinational team here. My experience at GAMBIT has also made me more aware of the various stages of game development from conception to production to distribution, and the importance of maintaining high production values throughout the entire development cycle.*

Fairuz Lokman

2008 summer program alum as a student at the National University of Singapore, programmer on *Phorm*, and now Gameplay Programmer at Ubisoft Entertainment

Lokman's positive experience was one of many. When one considers how many recent college graduates either have trouble finding jobs or do find ones but in fields with no connection to their major (or worse, to their interests), it was thrilling when the Media Development Authority of Singapore reported that half of GAMBIT's summer program grads went on to find jobs in the game industry—and an even larger percentage if you include employment in Singapore's media industry in general.





The Singapore-MIT GAMBIT Game Lab took enormous pride in its work. As you'll see in the appendix, no one could compete with its productivity, especially given that much of it was done in a blistering two-month block each summer. Its research was world-class. Its students, the best-trained. Its team, the most dedicated.

As it shifts into its new role as the MIT Game Lab, it has been worth looking back over these successes and lessons. They are the basis for the new Lab's broadened focus, no longer meeting the needs of just one country's game industry but actively recruiting new partners in all fields to ask, collaboratively, "What questions can be answered through a game?"

How can a health provider use a game to improve patients' diet and exercise? How can a museum use a game to draw patrons deeper into collections? Can the blind play with the sighted? Can a game communicate dream logic and the themes of Sophocles? Because of the Lab, we already know the answers to these questions are yes.

The MIT Game Lab carries on this tradition while adding this new, driving component to apply its five years of research to the challenges presented by its partners. It's time to put these lessons to work.

If by work, you mean a game.



**Table 1: Key Performance Indicators (KPIs) for Singaporean funders as at FY12 Q3**

KPI	Targets (to be met by 30 Sep 2011)	Realized KPI (as of June 2011)	Realized KPI (as of Sep 2012)	% realized to date
Training of Singapore undergraduates, polytechnic students, art school students	240	212	269	112.1%
Support for Singapore graduate students	36	69	119	330.6%
Support for Singapore Researchers (faculty, post doctoral researchers)	36	58	85	236.1%
Papers published or accepted ( <a href="http://gambit.mit.edu/readme">http://gambit.mit.edu/readme</a> )	42-60	124	233	388.3%
Publicly distributable games ( <a href="http://gambit.mit.edu/loadgame">http://gambit.mit.edu/loadgame</a> )	36	44	57	158.3%

**Table 2: Key Metrics for MIT as at FY12 Q3**

Training of US undergraduates (MIT UROPs, student workers from RISD, Berklee, & other institutes)	177
Support for US graduate students (through MIT Comparative Media Studies and Electrical Engineering & Computer Science)	13
Support for US Researchers (faculty, research staff, post doctoral researchers, visiting scholars)	29
Students taught at MIT classes	1000*

\*estimate based on average enrollment for all MIT game curriculum

**Table 3: Games Produced by GAMBIT**

<http://gambit.mit.edu/loadgame>

Year	Game	Year	Game
2007	Elementalyst*	2010	PAX POX*
2007	AudiOdyssey	2010	Afterland
2007	Backflow	2010	elude
2007	The Illogical Journey of Orez	2010	Improviso
2007	TakeOut!	2010	Poikilia
2007	TenXion	2010	Symon
2007	Wiip	2010	Seer
2008	NeuroTrance*	2010	Yet One Word
2008	Ochos Locos*	2010	Monsters in My Backyard†
2008	Sc-rum'pet*	2010	CarneyVale Showtime (Games for Windows)†
2008	Akrasia	2010	CarneyVale Showtime (Windows Phone 7)†
2008	GumBeat	2011	Abandon Complete*
2008	Moki Combat	2011	QP Curio's Novelty Engine*
2008	Mūzaic	2011	A Closed World
2008	Oozerts	2011	Eksa
2008	Phorm	2011	Robotany
2008	Picopoke	2011	The Snowfield
2008	CarneyVale Showtime†	2011	Squeezicks
2009	The Bridge*	2011	Stranded in Singapore
2009	GumBeat Gold*	2011	Backflow (for iOS)†
2009	Moki Combat v2.0*	2011	Dark Dot†
2009	Rosemary*	2011	Snap Escape - The Epic Swing†
2009	Tipping Point (paper)*	2012	Bosnobo: Primate Change
2009	Tipping Point (digital)*	2012	Fugue
2009	Abandon	2012	The Last Symphony
2009	Camaquen	2012	Movers and Shakers
2009	Dearth	2012	Movmote
2009	Pierre: Insanity Inspired	2012	Phantomation
2009	Shadow Shoppe	2012	Nightmare Duel†
2009	Waker		
2009	Woosh		
2009	Snap Escape†		

\* made at the US MIT Game Lab by US students, summer program alumni, and US staff

† made at the Singapore lab by summer program alumni and Singaporean staff

**Table 4: Awards Received for Games, 2007–2012**

Game	Award
CarneyVale Showtime	Dream-Build-Play 2008 (1st place)
elude	Foundations of Digital Games 2012 Research & Experimental Game Festival
elude	Games for Change ANZ 2012 (featured)
The Snowfield	Independent Games Festival 2012 (student finalist)
Robotany	Independent Games Festival China 2011 (student finalist)
Afterland	Independent Games Festival China 2010 (student finalist)
CarneyVale Showtime	Independent Games Festival 2009 (finalist, Seumas McNally Grand Prize)
Picopoke	Independent Games Festival 2009 (finalist, Next Great Mobile)
Backflow	Independent Games Festival Mobile 2008 (finalist)
Symon	Indie Game Challenge 2011 (winner, Kongregate Award)
Waker	Indie Game Challenge 2010 (finalist)
A Closed World	IndieCade Festival 2012 (finalist)
Improviso	IndieCade Festival 2011 (finalist)
Akrasia	IndieCade Festival 2009 (finalist)
AudiOdyssey	IndieCade Festival 2007 (E3, E for All, Game City)
Backflow	IndieCade Festival 2007 (E3, E for All, Game City)
The Illogical Journey of Orez	IndieCade Festival 2007 (E3, E for All, Game City)
TenXion	IndieCade Festival 2007 (E3, E for All, Game City)
Wiip	IndieCade Festival 2007 (E3, E for All, Game City)
Revolution	IndieCade Festival 2007 (E3, E for All, Game City)
A Closed World	Meaningful Play 2012 (finalist)
The Snowfield	Meaningful Play 2012 (finalist)
Movers & Shakers	Meaningful Play 2012 (finalist)
Afterland	Meaningful Play 2010 (winner, Best Student Created Game)
Afterland	Meaningful Play 2010 (runner-up, Most Innovative)
elude	Meaningful Play 2010 (winner)
elude	Meaningful Play 2010 (runner-up People's Choice)
Yet One Word	Meaningful Play 2010 (winner, Best Overall Game)
Yet One Word	Meaningful Play 2010 (runner-up, Best Student Created Game)
Snap Escape	Mochis Flash Awards 2010 (runner-up, Best Social Game)
Rosemary	Jay is Games Best of 2009 (nominated)
Akrasia	Jay is Games Best of 2008 (nominated, best game or interactive puzzle)
Carneyvale Showtime	PAX 10 2009
Dearth	PAX East Boston Indie Showcase 2010 (finalist)
Waker	PAX East Boston Indie Showcase 2010 (finalist)
Movers & Shakers	Serious Games Showcase & Challenge 2012 (finalist)
A Closed World	Serious Play Conference 2012 (Bronze award, Student)
The Snowfield	Serious Play Conference 2012 (Gold award, Student)

**Table 5: GAMBIT Faculty, MIT**

Name	Organization
Frédo Durand	MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)
Eric Klopfer	MIT Schiller Teacher Education Program (STEP)
Leslie Kaelbling-Pack	MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)
Tomas Lozano-Perez	MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)
Nick Montfort	MIT Writing & Humanistic Studies; Trope Tank
Scot Osterweil	MIT Comparative Media Studies; Education Arcade
Jovan Popović	MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)
Deb Roy	MIT Media Lab
Russ Tedrake	MIT Computer Science & Artificial Intelligence Laboratory (CSAIL)

**Table 6: GAMBIT Faculty, Singapore**

Name	Organization
Golam Ashraf	National University of Singapore
Richard Davis	Singapore Management University
Michael Garry	Temasek Polytechnic
Anthony Fang	National University of Singapore
David Hsu	National University of Singapore
Tan Ah Hwee	Nanyang Technological University
Wee Sun Lee	National University of Singapore
Tze-Yun Leong	National University of Singapore
Meng Hiot Lim	Nanyang Technological University
Tim Marsh	National University of Singapore
Kevin McGee	National University of Singapore
Alex Mitchell	National University of Singapore
Ong Yew Soon	Nanyang Technological University
Ooi Wei Tsang	National University of Singapore
Yong Peng Why	National University of Singapore
Lonce Wyse	National University of Singapore
Foo Chek Yang	Temasek Polytechnic

**Table 7: Game Development Curriculum created at MIT**

Course	Title
CMS.300/841	Introduction to Videogame Theory
CMS.607/843	Theory & Practice of Player Research
CMS.608/864	Game Design
CMS.610/922	Media Industries and Systems
CMS.611/6.073	Creating Video Games
CMS.612/866/21W.767	Writing for Videogames
CMS.616/868/21W.768	Social and Cultural Facets of Digital Games
CMS.590J/863J	Computer Games and Simulations for Investigation and Education
CNS.600	Special Topics: Videogame Theory and Analysis
CMS.600/996	Special Topics: Casual Games and Casual Players
CMS.600/996	Special Topics: Making Deep Games
CMS.S60	Special Topics: Unpacking “Super Serious” Serious Games
CMS.S60	Special Topics: Games for Social Change
CMS.602	Special Topics: Learning to play - playing to learn

**Table 8: Princeton Review rankings for Game Design**

Year	Ranking
2010	Number 6, Undergraduate programs
2011	Number 8, Undergraduate programs
2011	Honorable mention, Graduate programs
2012	Number 2, Undergraduate programs
2012	Number 3, Graduate programs



## Games and Their MIT Makers

Participatory games advance education.

By Nancy Duvergne Smith

The best modern video and online games do more than entertain. They also teach—and give players a say in how they learn. MIT is a pioneer in this participatory, games-to-educate approach, with a growing number of faculty and alumni leading the field. And students interested in this kind of gaming can tap MIT's academic strengths, such as artificial intelligence, as well as industry savvy right on campus.

### Playing to Learn

MIT is bolstering the educational value of games. The Education Arcade, a joint initiative between Comparative Media Studies (CMS) and the MIT Teacher Education Program is demonstrating the potential of video games that are fun to play *and* involve academic skills. Program faculty and students conduct research, bring the results to public attention, and produce lots of new games, such as *Gung-ho! A Google Maps Adventure*, a futuristic race that helps students learn U.S. geography.

CMS also offers courses such as The Art, Science, and Business of Videogames, taught by industry leader and Bethesda Softworks founder Christopher S. Weaver, SM '85. Weaver is renowned for creating *John Madden Football* and for coining Weaver's Law of successful games: "The quality of entertainment is inversely proportional to the perception of time engaged in it." That also holds true for serious games that can be used in education, medicine, and even combat training. "The key is the level of interaction a player can achieve with a particular game," says Weaver.

CMS codirector Henry Jenkins III, the intellectual leader of this new-media renaissance, is a passionate advocate for the participatory culture that encourages players to be active learners and creators. "Game culture creates strong incentives for people to become active participants in the community, to create something, and to give something back," he says.

### MIT GAMBIT

Faculty and students are expanding our understanding of games in the Singapore-MIT GAMBIT Games Lab, established in 2006 with funding from the Singapore Media Development Authority. GAMBIT, which stands for "gamers, aesthetics, mechanics, business, innovation, and technology," aims to accelerate digital-game research, develop a world-class academic program, and establish Singapore in the industry. Executive director Philip Tan '01, SM '03, is working with Jenkins and CMS codirector William Uricchio to help seed collaborations between MIT and three Singaporean universities.

Tan says GAMBIT is targeting a high-stakes industry growing because of a rise in online distribution and broadband connections, better word-of-mouth marketing, expanded audiences, and software advances. Emerging innovations in animation software, for example, could slash production costs.

"Singapore typically develops games with small groups of designers, the way the U.S. used to do," he says. "Now in the U.S., large teams develop games over one or two years at a cost of as much as \$40 million. If we can streamline the technology of how games are made, that will open up opportunities for small developers worldwide."

### Early Game Days

The history of computer-based games at MIT begins with the legendary invention of *Spacewar* in 1961 by members of the Tech Model Railroad Club, led by Stephen Russell '60, SM '62, EE '66.

Another educational-gaming pioneer was Seymour Papert, a mathematician and artificial-intelligence researcher who, in the late 1960s, broke new ground in computer-based learning with Logo, the first programming language for children. At the Media Lab in the mid-1980s, Papert and Idit Harel Caperton, PhD '88, both theorists of hands-on or constructionist learning, demonstrated how the act of creating new software games helps children learn.

"Children—and grown-ups—learn best when they actively engage in playful explorations of ideas," says Harel Caperton. She acted on that theory in 1995 by creating MaMaMedia, the first website to invite young children to create their own animated media and games. "My primary goal for MaMaMedia was to create an Internet business for teaching kids the three Xes—exploring, expressing, and exchanging ideas by using and sharing new digital media—through the first generation of participatory technology," she says.

### Industry Leaders

As the industry swells—Americans now spend \$7 billion annually on retail video games—MIT alumni are making an impact. The field's longtime leaders include Marc Blank '75, a co-designer of the popular text adventure game *Zork*, and Steven Eric Meretzky '79, who created such famous games as *The Hitchhiker's Guide to the Galaxy*. Black Ops Entertainment, cofounded in 1994 by CEO John Botti '90 and three other MIT grads, released the award-winning Knockout Kings series.

Game writer, producer, and consultant Sande Chen '92 is the coauthor of *Serious Games: Games That Educate, Train, and Inform*, published in 2005. She also leads Girls in Games, a nonprofit that encourages girls and women to enter the industry. In 2006, Next-Gen.Biz named her one of the industry's "Top 100 Most Influential Women."

And recent graduates are using MIT as a springboard into the industry. "I've known that I wanted to work in the games industry since I was 10," says Nick Hunter '06, a feature producer in Electronic Arts' Sims Division. "When I came to MIT I was very focused on that goal." At MIT, Hunter studied economics and literature and worked on Education Arcade projects. He also spent a summer interning at Electronic Arts.

### Do-It-Yourself Games

Games are a growth industry in part because their audience has broadened beyond young men. Sabri Sansoy, SM '87, vice president of the Game Show Network (GSN), says the typical viewer of his company's television and Web programs is a middle-aged woman with an income of \$60,000. GSN recently launched *Playmania*, the first live, participatory game show in the United States.

What's next? MIT's message about the value of engagement and learning is echoing throughout the industry. According to Sansoy, GSN will soon provide software modules that people can use to create and publish their own games. "That's what you'll see in the future—the YouTube of games," he says. "People will be creating their own."

**Connect with MIT Game Creators:** Subscribe to an alumni e-mail list for the industry, mitgamealums, at [alum.mit.edu](mailto:alum.mit.edu).



GAMING : GAMING REVIEWS 

## Today's Homework: Make Good Games

Chris Kohler  02.13.07

MIT professor Henry Jenkins is the accidental hero of video gamers. As the longtime head of MIT's groundbreaking Comparative Media Studies department, Jenkins is a well-spoken, passionate advocate of the benefits of new media and popular culture. In a world where video games are excoriated by authority figures who say they rot our children's brains, Jenkins is their highest-profile defender.

So when Jenkins speaks, the game industry listens. And right now, he thinks the business could use a dose of creativity.

"Studio-based production, across all media, has had two effects: ensuring a relatively high standard of production and capping opportunities for innovation and individual expression," Jenkins says. "As the costs of games get pushed higher and higher, many wonder where fresh new ideas will come from."

The fresh new ideas will be coming from the next generation of game designers -- and the schools that train them. As the medium expands to include everything from big-budget epics to viral, web-based minigames -- both of which can be highly profitable -- educators are creating a variety of new approaches to game design. Michigan State University is readying a master's program in "serious games." And a small digital arts college in the San Francisco Bay Area wants to teach budding designers how to tell stories, then train them in a pseudo-professional environment. And Jenkins and MIT want to create new game genres and turn them into commercial products.

The recently announced [Singapore-MIT International Game Lab](#) is a collaboration between MIT and the Singapore government's Media Development Authority. Singapore hopes to create 10,000 new jobs in the digital media sector by 2015, and to that end will send its best and brightest to study at MIT -- about 30 to 40 undergraduate students each year, says Philip Tan, executive director of the lab's U.S. operations.

Faculty, postdoctoral students and graduate researchers will all work together under the auspices of the lab to study game design and produce "a lot of games, somewhere between five and 10 each year," says Tan.

"The game industry isn't particularly fond of reading research papers from academia," but its leaders do pay attention to games, says Tan.

Jenkins says the university connection will foster greater innovation: "We see the lab as a space where we can move swiftly from pure research into compelling applications, and then partner with the games industry to bring the best ideas to market."

The Asian connection is also key. Games developed in Asia don't always translate well to Western audiences, and vice versa. "The next generation of game designers will need to be able to communicate in a global context and appreciate the cultural diversity that characterizes current game production," Jenkins says.

But what also characterizes current game production is a bleeding-edge, high-tech production process -- which even well-funded universities rarely match. [Expression College for Digital Arts](#) in Emeryville, California, kicked off a bachelor's degree program in game art and design this month, with an eye toward putting its students on the fast track to professional competency.

Expression's program is nearly indistinguishable from actually working in the business, says Spencer Nilsen, the school's president. "It's really a production company, as well as a school," he says.

Students use the same equipment as the pros, and work in the same type of environments -- in fact, if you didn't know any better you'd swear that Expression's campus was one of the Bay Area's innumerable digital production studios.

Expression's faculty is made up mostly of working professionals with years of experience at places like Pixar Animation Studios, Electronic Arts and Industrial Light & Magic. Nilsen is the former head of the music department at games publisher Sega.

Nilsen is a proponent of mastering the basics. Students who want to work with the school's million-dollar digital mixing boards must first learn to splice magnetic tape. Wannabe 3-D modelers are first put through "drawing boot camp." Designers get hands-on with old 8-bit gaming hardware.

"We want to know that if we took everything away and gave them a napkin and a pencil, they could get their ideas across," he says. "We want to make sure that students understand that the constraints of the system can sometimes spark creativity."

To get those juices flowing, every Expression student will collaborate with their peers to create a fully produced short film -- whether or not they want to work in the movies, says Nilsen. "It's stories that drive people's obsession with video games, whether they're playing on a handheld or a big screen. I'm hoping our students will get that," he says.

And some game designers have serious stories to tell. Michigan State University is gearing up to launch a [master's degree course](#) devoted entirely to the study of games with goals that go beyond pure entertainment.

Serious games are quickly becoming a seriously big business: \$60 million a year, by some estimates.

The United Nations got the word out about its [food-aid programs](#) with a game called *Food Force*. Student-resistance leader Ivan Marovic is using games to teach strategies for [nonviolent protests](#).

The university is currently seeking students to enter the program this fall, opening the program to candidates from such far-flung majors as journalism, museum studies and computer science.

Bringing together so many different disciplines is a challenge. While the power of serious games stems from their ability to reinforce a message or reward a desired behavior, putting together a successful game requires skilled designers and people educated in the science of learning, as well as the specific subject matter. And it's not always easy for them to work together.

"Everything the game designers would come up with," says professor Carrie Heeter, "the scientists would say was not good science. And then the scientists would say, 'What about this?' and the game designers would say, 'It's not a good game.'"

"But after a couple of years of working together, these people are going to be really great team members."

If Heeter and her colleagues are right about the power of serious games, the possibilities are endless. "In 25 years, my hope is that doctors will be at least as likely to prescribe a relaxation sleep game as they would an insomnia pill. I like that kind of a world."



# The Best Schools for Gaming

The **Top 10 Undergraduate** videogame design programs and what makes them so great, as ranked by **The Princeton Review**.

**#1 University of Southern California**  
*Interactive Media Division, Computer Science (Game Development)*  
Location: **Los Angeles, CA**  
**63** Game-related courses offered this year  
**71%** of 2011 Graduates have worked on a shipped game  
**Fun Fact:** In addition to sponsored research projects, weekly seminars, and a class focused on networking and skill-sharing, the program also hosts weekly board game nights.

**#2 Massachusetts Institute of Technology**  
*Singapore-MIT GAMBIT Game Lab*  
Location: **Cambridge, MA**  
**60** Game-related courses offered this year  
**100%** of 2011 Graduates have worked on a shipped game  
**Fun Fact:** MIT's program is very opposed to crunching, and helps students manage their time and cut features, instead of working more than 8 hours a day on a full-time project.

**#3 University of Utah**  
*Entertainment Arts & Engineering*  
Location: **Salt Lake City, UT**  
**27** Game-related courses offered this year  
**14%** of 2011 Graduates have worked on a shipped game  
**Fun Fact:** Microsoft provided the school with a full Xbox Lab.

**#4 DigiPen Institute of Technology**  
Location: **Redmond, WA**  
**262** Game-related courses offered this year  
**85%** of 2011 Graduates have worked on a shipped game  
**Fun Fact:** DigiPen is the only school in the world whose students have won awards in the IGF Student Showcase every year since the Showcase began (33 total).

**#5 The Art Institute of Vancouver**  
*Game Art & Design, Visual & Game Programming, 3D Modeling for Animation & Games, Game Programming BSC*  
Location: **Vancouver, BC**  
**100** Game-related courses offered this year  
**80%** of 2011 Graduates have worked on a shipped game  
**Fun Fact:** Over 772 students have graduated from The Art Institute of Vancouver's game-related programs, the second-most of any school on this list.

**#10 Becker College**  
*BA in Interactive Entertainment: Game Design & Game Programming*  
Location: **Worcester, MA**  
**22** Game-related courses offered this year  
**20%** of 2011 Graduates have worked on a shipped game  
**Fun Fact:** All of their gaming faculty have started, run, or worked for a game.

**#6 Rochester Institute of Technology**  
*School of Interactive Games & Media*  
Location: **Rochester, NY**  
**80** Game-related courses offered this year  
**50%** of 2011 Graduates have worked on a shipped game  
**Fun Fact:** 100 students in Rochester's programs are supported by game-design research funding. The next closest on this list had 20.

**#7 Shawnee State University**  
*Gaming & Simulation Development Arts, Digital Simulation & Gaming Engineering Technologies*  
Location: **Portsmouth, OH**  
**42** Game-related courses offered this year  
**66%** of 2011 Graduates have worked on a shipped game  
**Fun Fact:** Shawnee was the only school on this list that saw 100% of its 2011 undergraduates take a job in some aspect of game development by the time they graduated.

**#8 Savannah College of Art & Design**  
*Interactive Design & Game Development*  
Location: **Savannah, GA**  
**70** Game-related courses offered this year  
**64%** of 2011 Graduates have worked on a shipped game  
**Fun Fact:** Savannah was one of only two schools on this list that teaches all 12 technologies The Princeton Review asks about.

**#9 University of New Mexico**  
*Advanced Graphics Lab Games Division*  
Location: **Albuquerque, NM**  
**15** Game-related courses offered this year  
**80%** of 2011 Graduates have worked on a shipped game  
**Fun Fact:** Students work towards creating an entire game, which must be completed and released to the public via platforms like Xbox Live and Apple's iStore.

The Best **Schools for Gaming**

The **Top 10 Graduate** videogame design programs  
and what makes them so great, as ranked by **The Princeton Review**.

**#1 University of Southern California**

*Interactive Media Division, Computer Science (Game Development) Masters*

Location: **Los Angeles, CA**

**PhD** highest degree offered

**\$75k** mean base salary\*

**Fun Fact:** USC was one of the few schools that offers courses in all 17 fields of study surveyed for (and 3 more on top of that!).

**#2 Rochester Institute of Technology**

*School of Interactive Games & Media*

Location: **Rochester, NY**

**Masters** highest degree offered

**\$55k** mean base salary\*

**Fun Fact:** 100 students in Rochester's programs are supported by game-design research funding. The next closest on this list had 20.

**#3 Massachusetts Institute of Technology**

*Singapore-MIT GAMBIT Game Lab*

Location: **Cambridge, MA**

**PhD** highest degree offered

**\$65k** mean base salary\*

**Fun Fact:** MIT has the only graduate program on this list whose faculty all have PhDs.

**#4 University of Central Florida**

*Florida Interactive Entertainment Academy*

Location: **Orlando, FL**

**Masters** highest degree offered

**\$51k** mean base salary\*

**Fun Fact:** One of the cornerstones of UCF's program is working in teams. Grad students are paired up with other artists, programmers, and producers on their first day.

**#5 Southern Methodist University**

*The Guildhall at SMU*

Location: **Plano, TX**

**Masters** highest degree offered

**\$60k** mean base salary\*

**Fun Fact:** By the time they graduate, students will have a portfolio of at least three functional games.

**#6 Carnegie Mellon University**

*Entertainment Technology Center*

Location: **Pittsburgh, PA**

**Masters** highest degree offered

**\$55k** mean base salary\*

**Fun Fact:** Over 500 students have graduated from CMU's videogame design graduate programs.

\*of gaming graduates who accepted employment by 3 months after graduation



## G4U: The Singapore-MIT GAMBIT Video Game Program Wants To Teach You Game Design



 [Leave a Comment](#)

Posted September 15, 2011 - By [Dennis Scimeca](#)



You may have seen men and women in white lab coats under extremely large, orange banners from the Singapore-MIT GAMBIT Game Lab if you attended PAX East 2011. They were a contingent showing off the results of their collaborative efforts meant to promote and discover inventive directions in game design.

You may already be familiar with some of the Lab's work, but didn't realize it. *Carmeyvale: Showtime* was released as an [Xbox Live Indie title](#) in 2008, and in 2009 was featured as part of PAX 10, which promotes the work of indie creators. Critics [praised](#) the game's polish and design, and a version was released in 2010 for Windows Phone 7 was [described](#) as the platform's "early, lofty, benchmark."

*Carmeyvale* is just one of four "featured games" on the GAMBIT website, but it's important to remember that the primary focus of the Lab is not commercial product, but experimentation. The first time I ever met a GAMBIT member was earlier this year in May, during the Games Beyond Entertainment conference held in Boston, MA. Lab Interaction Design Director Marleigh Norton gave a short presentation of an audio-only, single-button game she was developing. This sort of research is one of the Lab's primary mandates.

Students at the Lab are attempting to [teach artificial intelligences](#) how to portray characters and [play Civilization](#), and studying the habits of [sports gamers](#), for example. The Lab plays host to talks by game design



The [faculty and staff](#) on the US side of the project are an interesting collection of pure academics, video game industry veterans, and artists. Former employees of THQ, Dreamworks Interactive, and Irrational Games work alongside professors of comparative media and experts in interface research, among other fields of study.

The research conducted at the Lab is also eclectic. Looking over the list of publications, lectures, and graduate student theses [available](#) on the GAMBIT website, there's no unifying theme other than experimentation. Tan did identify a few specific areas of interest for the Lab. "Companies and players both have difficulty recognizing and dealing with online hate speech, and that's bad for game culture as a whole," he said. One of the projects presented at PAX East 2011 dealt with hate speech in the gamer community.

"Our perspective on games for learning and games for health is a little different from where [commercial video game] industries are currently invested in," Tan said. GAMBIT is also deeply invested in examining video games as cultural phenomena. The Lab publishes a bi-annual journal titled [Eludamos](#), which seeks to discuss games through a wide variety of lenses including cultural studies, media studies, art history, sociology, social psychology, and semiotics.

I asked Tan whether he had seen any of the Lab's ideas incorporated into the video game marketplace. "I wouldn't claim that any current games or developers were directly inspired by our ideas, but there are a couple of trends that I feel we were slightly ahead of the curve," he said, identifying some of the Lab's many game prototypes, available on the GAMBIT website, which can be downloaded and played for free.

"I think we were doing auto-rigging of 3D characters before it became a standard industry technique [[Phorm](#), [Abandon](#)]. One-button game design turned out to be pretty useful for mobile game development [[CarneyVale: Showtime](#),

"Then there are our areas of research that are relevant to the industry, but still have a long way to go. We've been pushing game design for accessibility [





Unlike some of the organizations we're investigating during University Week, GAMBIT is not about a full course of academic study. "GAMBIT isn't a degree-granting program – we're just a lab at MIT. However, we are housed in the Comparative Media Studies program, which offers a 2-year Masters graduate degree," Tan said.

"We generally see a lot of computer science and media studies students from MIT, with a smattering from the other departments," he said, but the Lab is open to students from other institutions as well. "We also have a lot of interns from Rhode Island School of Design, the Berklee College of Music, and Wellesley."

GAMBIT offers a wide variety of courses like Introduction to Videogame Theory, Game Design, Creating Video Games, Writing for Games, Games and Social Change, Media Industries & Systems, Computer Games & Simulations for Education, and Learning & Games.

In addition to their courses offered during the regular school year, the Lab hosts a nine-week, intensive game development experience called the Summer Program. Groups composed entirely of summer interns, led by the staff of the Lab, create games from start to finish that incorporate research elements that suit the needs of clients drawn from the local research community.

The Summer Program was the genesis of *Symon*, a browser-based game that won the Best Browser Game category at the 2010 [Indie Games Challenge](#). *Symon* is a point-and-click adventure/puzzle game about the dreams of a paralyzed man, and is different every time it's played. This is accomplished with procedural puzzle generation, or computer algorithms that take various pieces and assemble them to make new content on the fly. You can [try Symon for free](#) on Kongregate.



I asked Tan what would best prepare students to get the most out of the courses offered by the Lab. "Successful grad applicants to Comparative Media Studies come from a pretty wide range of backgrounds, but all of them need to demonstrate pretty impressive writing and analytical skill," he said. "That can come from an undergraduate degree or from work experience; many applicants are folks who have already worked a few years in media, including the game industry."

Finally, I asked Tan where former members of the Lab tend to go once they've finished their studies in the program. He told me that local Boston studios like Harmonix Music Systems, Irrational Games, Demiurge, and Fire Hose Games were all attractive for Lab alumni. "Of course, a lot of folks also now work outside Boston, with some going into R&D," he said, with companies like Electronic Arts, Activision, Microsoft, Zynga, Google, NVIDIA, and Disney.

Fire Hose Games in Cambridge, MA was founded by Eitan Glinert, an alumnus of the GAMBIT Lab. His studio's first game, [Slam Bolt Scrappers](#), became a PlayStation Network exclusive after grabbing the attention of the video game press at PAX East 2010. I asked Glinert how his time at the Lab prepared him for the realities of running a game development studio.

"GAMBIT was pivotal in my decision to start up Fire Hose Games. People there pushed me to go and implement the games I felt were worth making, never once saying 'that's a stupid idea,'" Glinert said. "The summer crucible in which we made games in 2 months helped teach me development scoping and gave me a greater understanding of the reality of production. They also helped me build the connections and network I would later call upon when I needed help with my fledgling studio."

*Dennis Scimeca is a freelancer from Boston, MA. His weekly video game opinion column, [First Person](#), is published by Village Voice Media. He occasionally blogs at [punchingsnakes.com](#), and can be followed on Twitter:*



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## Seminal computer video game Spacewar lives again

MIT creates a simulation to celebrate the 50th anniversary of Spacewar. A relic of the early days of minicomputers, it was one of the first computer video games and set the stage for many others, including Asteroids.

by [Martin LaMonica](#) | February 11, 2012 4:00 AM PST

Dan Edwards (left) and Peter Samson playing Spacewar on the PDP-1 display. Edwards and Samson made significant contributions to the video game before it was released in 1962.

(Credit: Computer History Museum)

CAMBRIDGE, Mass.--In its typically geeky fashion, the Massachusetts Institute of Technology celebrated the birth of one of the first video games by challenging students to re-create it on a computer the size of a business card.

MIT engineering students and faculty this week showed off a simulation of Spacewar on campus and at the MIT Museum to mark the 50th anniversary of the video game's release. Written by four students in their spare time, the video game influenced how many later games were designed and was part of a broader shift in how people viewed computers.

Spacewar, created on Digital Equipment's PDP-1 minicomputer, was instrumental in showcasing the graphical capabilities of computers and new modes of user-computer interaction. It also helped showed people that computers could be used for fun, not only serious work.

### Video game Spacewar reborn at 50 (photos)

1-2 of 10



MIT gained access to a PDP-1, a refrigerator-size "minicomputer," in the early 1960s and gave students regular access to it in MIT's Kludge computer room. That arrangement of letting programmers tinker with the computer during the machine's downtime helped seed the hacker culture that later flourished, [according to the Computer History Museum](#).

"The PDP-1 had enough downtime that people could mess around with it, which was different from the IBM mainframes, where every second was used," said Phillip Tan, U.S. executive director of MIT's [GAMBIT game lab](#), who oversaw the simulation project. "It allowed for people to experiment and use it for playful stuff."

The first version of Spacewar was written by Steve Russell, who was [inspired by pulp science fiction novels](#) and the space race of the time. Significant improvements were later made by Peter Samson, Dan Edwards, and Martin Graetz, and in the spring of 1962, the programmers made the game available to Digital Equipment users for free. Later it was loaded onto PDP-1 computers and used to show customers that the machine was working.

The game itself helped establish some of the constructs of later games. Two players operate controls to navigate a spaceship and shoot torpedoes at each other. Later the "hyperspace" feature was added--which let players try to avoid danger by having their ship vanish and reappear randomly elsewhere on the screen. People familiar with the arcade classic Asteroids, a single player game, would quickly feel at home with Spacewar.

But there's a significant difference between Asteroids and Spacewar, which reflects a scientific approach the MITers took to computer games, Tan said. When playing Spacewar, gamers need to contend with the force of gravity as their ships are pulled toward the sun in the center of the screen. When players get good, they can approach the sun and, with the right thrust, get a slingshot effect and fly off.

The physics of the gravitational force are accurate, reflecting how many MIT programmers wrote simulations of real-world phenomena, Tan said. (The other stars on the screen, which were hard-coded and depicted the evening sky at MIT, don't exert gravity.) Originally, the game was controlled from buttons on the computer itself, but since the porthole-like monitor was not directly in front, people created separate controls so they could see better while playing, Russell explained in an [interview last year](#).

### Digital archeology

To create a simulation of the game for people to play today, MIT students got hold of the source code of the original Spacewar and ported it to the cheap [Arduino electronics platform](#), which is typically used for hardware prototyping.

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- 

The Arduino microcontroller, which fits in the palm of a hand, has roughly the same processing power as the original 18-bit PDP-1, said Owen Macindoe, a graduate student at MIT's Computer Science and Artificial Intelligence Lab, who worked on the porting project.

One of the biggest challenges was simply decoding the original source code, which was essentially "digital archeology," Macindoe

said. Spacewar was originally written in the assembly language of the PDP-1, a significant difference from today's abstract languages that are a buffer between programmers and machine-level commands.

"It was very hard to recognize from modern programming languages because it was so low level and it used a lot of machine-specific tricks which they had to because of the limitations they had," Macindoe said.

Because there was little memory, programmers didn't have the luxury of reserving a block in memory for images of the space ships. Instead, they had to write step-by-step instructions in the program on how to render them at runtime. "It was pretty weird," said Macindoe. "But it was exciting when we figured it out."

Porting the program posed other challenges in re-creating quirky features, such as certain conditions where torpedoes from one ship would pass right through the other.

Spacewar was eventually turned into an arcade game and a home video game. But it was never the huge hit that successors such as Asteroids were, partly due to controls that were relatively complicated for the time, Tan said.



On the other hand, the basic setup of having two opponents with separate controls shooting at each other continues to this day. And as many MIT students found out this week, Spacewar is fun to play, too.

Topics: [Computing](#) Tags: [Spacewar!](#), [video games](#), [MIT](#)



## Cold, Comfort, Harm: The Snowfield

By [Adam Smith](#) on January 26th, 2012 at 2:10 pm.

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It's quite warm here this morning for the first time in days and I was dangerously close to enjoying the sun's gentle caress, which would be a terrible betrayal of mistress moon. Thankfully I keep a stock of chilly and chilling games behind glass for just such an eventuality and today I've broken out **The Snowfield**, from brainy chaps at the **Singapore-MIT Gambit Game Lab**, whose output **we've covered previously**. This third-person adventure runs in browsers through the magic of Unity and it's quite conventional to play in some ways, though shot through with atmospheric and narrative weirdness. Best to **play it** rather than listen to me, or read a little more in the icy depths below.

In The Snowfield you are a lone soldier wandering the aftermath of a great battle. It is the dead of winter and you won't last long in the cold. But you are not alone.

There you go. Survival is the task – survival from the cold and perhaps from whatever it is that's keeping you company out there. Or perhaps not. You'll have to play for yourself because I'm not spoiling that. What I will say is that snow has rarely felt more like the ashes of the dead. It's all a bit grymbolic and unsettling.

Occasional graphical glitches detract from the well-worked aesthetics, although thinking back I'm not entirely sure they're not intentional, though the experimental part of this experiment is in the design process rather than the style of play.

## Rock, Paper, Shotgun / January 26, 2012



The Snowfield represents an attempt to make a simulation-based narrative game according to a special method for developing such games, a method designed to avoid the need for complex A.I. or massive content generation. The idea was not to relying on codified narrative theories or formulas – like three-act structures, etc. – but rather assume “what makes a good story” cannot be systematized and instead must be arrived at organically via extensive user testing.

What this appears to boil down to is creating a series of objects, characters and tableaux loosely tied to a theme, and then allowing people to interact with them in isolation, observing and studying the reaction to each element. With that feedback, the features are stitched together into a whole, which is The Snowfield. In a way, it seems like a form of improvisation based around spectator feedback, except with the elongated timescale necessary for game development. Maybe there's a connection to **Sleep Is Death** in the thinking, although with a radically different approach?



## Rock, Paper, Shotgun / January 26, 2012

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I've enjoyed exploring this shell-shocked space but it's hard to know exactly how "inverting the traditional relationship between Design and QA" has impacted on the process. Maybe it's for the best if the design process doesn't intrude on the player's experience, like some sort of invisible guiding hand, but I am the kind of man who would unpick the threads on the whole world if he could find a loose end. **Wander the snows. Seek the threads.**

## Game puts artificial intelligence in the mind of the beholder

What if developing certain kinds of AI didn't have to be so laborious?

Andrew Whitacre  
Singapore-MIT GAMBIT Game Lab

October 31, 2011



When it comes to programming video-game characters to act realistically in response to ever-changing environments, there is only so much current artificial intelligence (AI) can do.

Even skilled AI programmers can devote years to a single game. They have to consider all the events that might occur and map out characters' possible reactions: In a first-person shooter game, for example, the AI-controlled character needs to know how to collect ammunition, seek his target, get within firing range and then escape.

What if making certain kinds of AI didn't have to be that laborious? What if an algorithm, extrapolating from a few decisions made by players, could figure things out for itself — and even reuse those lessons from one game to the next?



And what if all this could be done by someone with no AI training at all?

"Robotany," a game prototype from the Singapore-MIT GAMBIT Game Lab, wants to answer those questions.

Set in a garden, the game features small, robot-like creatures that take care of plants. The player manipulates graphs of the robots' three sensory inputs — three overlapping AIs — and these manipulations teach the AIs how to direct characters in new situations.

- [Play Robotany](#)

"The scheme behind Robotany requires that we ask the user to describe what the AI should do in just a few example situations, and our algorithm deduces the rest," says the game's product owner, GAMBIT Game Lab's Andrew Grant. "In essence, when faced with something the user hasn't described, the algorithm finds a similar situation that the user *did* specify, and goes with that."

The game was developed as part of GAMBIT's eight-week summer program, which brings together young artists, programmers and project managers from U.S. and Singaporean institutes.

Robotany's 11-person team pushed game research in a unique direction by taking advantage of the human brain's ability to identify patterns.

"With our approach," Grant says, "we can drastically reduce the number of examples we need to make an interesting AI, well before you'd traditionally get anything good."

Game director Jason Begy adds, "The player can effectively give the characters some instructions and then walk away indefinitely while the game runs."

Other AI developers are enthusiastic about this new approach.

"Robotany represents a great new direction for game AI," says Damian Isla, who was the artificial intelligence lead at Bungie Studios, makers of the "Halo" franchise. "The AIs' brains are grown organically with help from the player, rather than painstakingly rebuilt from scratch each time by an expert programmer."

MIT Media Lab researcher and GAMBIT summer program alumnus Jeff Orkin says solving this kind of challenge would be "one of the holy grails of AI research," since the video game industry spends an incredible amount of time and money micromanaging the decisions that characters make. "It would be a boon to the game industry, as long as the system still provided designers with an acceptable degree of control," he says.

## MIT News Office / October 31, 2011

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The Robotany team, honored as a finalist in the student competition at the upcoming [Independent Games Festival, China](#), also included producer Shawn Conrad of MIT; artists Hannah Lawler of the Rhode Island School of Design, Benjamin Khan of Singapore's Nanyang Technological University and Hing Chui of the Rhode Island School of Design; quality assurance lead Michelle Teo of Ngee Ann Polytechnic; designer Patrick Rodriguez of MIT; programmers Biju Joseph Jacob of Nanyang Technological University and Daniel Ho of National University Singapore; and audio designer Ashwin Ashley Menon of Republic Polytechnic.

## Procedurally Generated Points And Clicks: Symon

By [John Walker](#) on May 28th, 2012 at 5:00 pm.

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I was recently pointed in the direction of **Symon**, a free experimental point and click adventure from Singapore-MIT's game laboratory, Gambit. The idea behind it is to see if it's possible to create a procedurally generated narrative adventure, with unique puzzles. Which is quite an ask. The results, they're an interesting combination of cheats and potential.

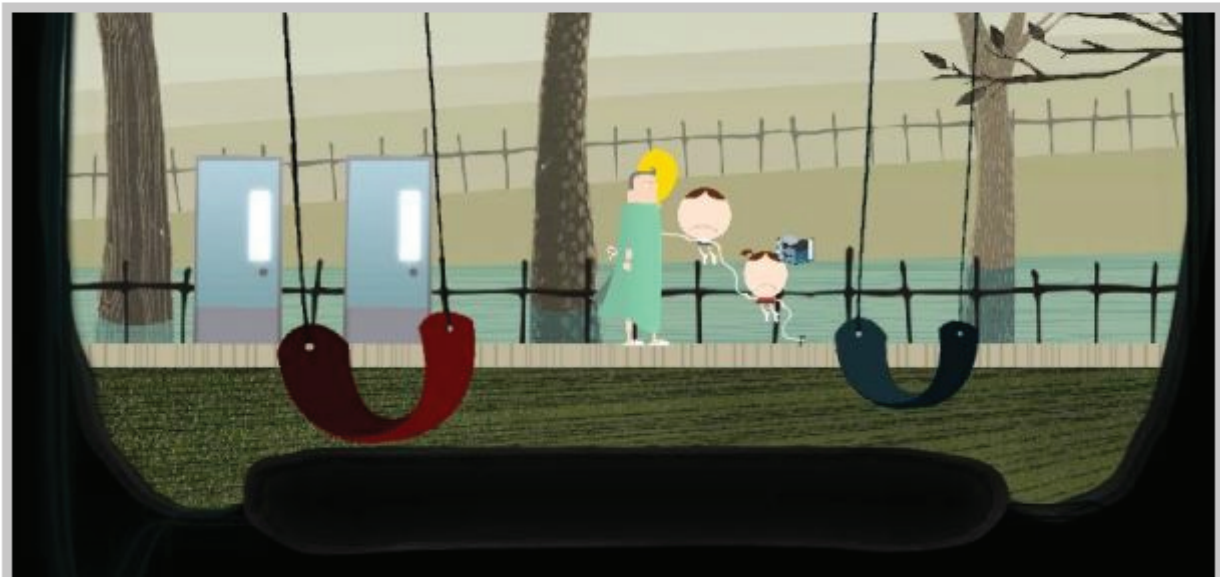
You play as a man paralysed in hospital, presumably dying. And from this perspective, you are naturally in fairly sad territory. Each adventure you generate is a dream, and as such embraces dream logic. And there's where the clever cheats come in. Each time you play, and I've played it through six times now, it not only combines together a different collection of scenes, but also a different selection of puzzles using a small set of objects. There are also three main scenarios it picks from, mixing things up further, although for each you're gathering three objects that represent memories from your past, gathered for a version of yourself in a hospital bed within the dream. Following me so far? Good.





Each location has two impossibly standing doors, linking them altogether, a final door not unlocking until all three objects have been collected. And to get them, it's a fairly elementary inventory puzzle situation. Some girls with a balloon want a sad storybook, but the one you've found is cheerful. So you apply dream/adventure logic and click it on some bitter water in a sink. The combination creates a morose storybook, and the girls reward you either with another item used in a similar way elsewhere, or one of the three memories.

Next time you play, they may want a happy story, or some bitter chocolates, or they may not be there at all. Then repeat that idea for five or six locations, and you've got something approaching a unique situation each time you play, albeit with extremely similar motifs each time.



The result is mixed. The first time through it's an interesting experience, a very short, novel adventure, where dream logic makes for an interesting twist. The second time you're impressed at how different it is. And the third all you can see is the matrix. There also appear to be some issues with its letting you go down blind alleys, perhaps turning some roses blue before realising you need them red, and having no way back other than restarting. Restarting five minutes' play admittedly, but it's still a bit crap to do that. But what it does reveal is a great deal of potential. The internal 'logic' is consistent, and if the idea were taken much further, with far more scenes and a vast number more variables, you could end up with something that's genuinely generating a playable experience that would be utterly unique each time. However, as I mentioned before, dream logic allows quite a lot of cheating in design. It'd be interesting to see if it were possible to create something that didn't rely on such obscure combinations.

As a prototype, Symon is really exciting. And as a game itself, it's a surprisingly emotive vignette those first couple of times through. It **plays neatly in a browser**, although while the music is absolutely lovely, there's no flipping way to shut it up when you're in another tab.

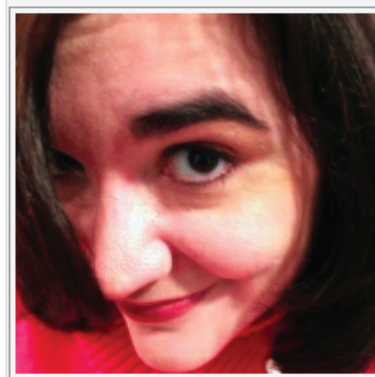
## Bit of a Rebel: Clara Fernández-Vara

*This is the fifth article in the series [The Academics Are Coming](#).*

[Clara Fernández-Vara](#) is a researcher for the [Singapore-MIT GAMBIT Game Lab](#) and much of her research is focused on the integration of story and gameplay. She has been involved in the development of several games through her studies.

She's written an interactive fiction, [Ariel](#), based on Shakespeare's *The Tempest*, but the bulk of her work concerns point-and-click adventuring. [Rosemary \(2009\)](#) adopted the "remembered past" as a mechanic (previously [featured on Rock Paper Shotgun](#)). [Symon \(2010\)](#) explored procedural generation in the adventure space using dream logic to sweep any narrative problems under the carpet (flagged on [RPS just yesterday](#)). The follow-up to *Symon* was [Stranded in Singapore \(2011\)](#) which aimed to standardize the procedurally-generated approach.

Fernández-Vara talked to *Electron Dance* about her work, what she loves about developing academic games and how research should not be constrained by the concerns of industry.



Clara Fernández-Vara

### HM: Clara, there is still much scepticism regarding the value of academic research so... why become a game studies academic?

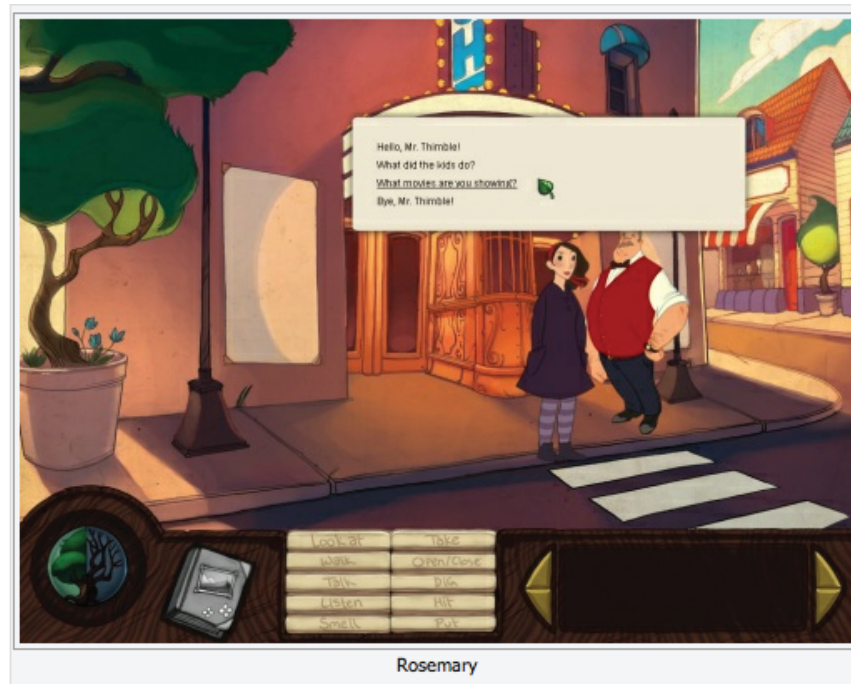
I was already on the academic track; I started my PhD in English and American literature in Spain to study Shakespeare on film. At first it was a secondary interest, tracing the similarities between traditional fairytales and videogames, particularly arcade games. Literature gave me the excuse to rediscover games, because literary theory helped me understand them in a new way.

Then I came to the US to study media studies at MIT, where I was surrounded by people studying comics, Bollywood movies, radio production; games were one more topic in the mix. I also started to hang out with people like Jesper Juul and my colleagues at the Education Arcade, who were games researchers and developers. Talking to them, I realized that there was so much to learn, that game studies was a vast field, mainly unexplored. My background in literature, and mostly on studying texts in performance, had provided me with good tools to gain important insights. I felt like I could make a contribution, which is essential to be a scholar. Making games was also very attractive--if I was part of theatre productions as a theatre scholar, it seemed natural to participate in production to understand my field of study better.

I've realized I just changed the subject of study, from theatre and film to games, and brought all my methods along. I focus on story-driven games because of my literary background, and work on adventure games because it is one of my favourite genres, and I know how to design and program them best. So basically I wanted to stay in academia, having a subject of study that was challenging and engaging. Although I have less resources than I'd have working in the industry, staying in academia gives me the liberty to make games about themes and using mechanics that commercial games would usually not tackle.

As for some people's contempt towards games scholarship, it's not something I'm too worried about. One of my teachers in Madrid frowned on me when he heard I wanted to study games, he said it was "a waste of time" and that I should stick with Shakespeare. I think he was one of the reasons why I study games--I wanted to show him and others that games are not only a very valid field of study, but that by understanding them better we can make the expressive possibilities of games thrive. Plus I'm a bit of a rebel--whenever a teacher told me I should stay on the beaten track to succeed, I promptly ran the other way. So far, it's worked pretty well for me.





### HM: How would you define your role on Rosemary, Symon and Stranded in Singapore?

As a researcher working with student teams, my role is first explaining what my research is and what I'm trying to learn from making the game. I guess that in industry terms I'm closer to a creative director. I start by explaining my design philosophy to the team, and my focus on exploration and world building, on letting players discover the world and make sense of it. There are certain design choices that I usually make beforehand, such as what type of adventure game we are making, or the topic of the game, e.g. the core mechanic is remembering, or the game takes place in Singapore. The students have ownership of the game too--it's not made on spec, but rather is the result of the collaboration of the whole team. I'm leading the orchestra, but I cannot play alone.

Rosemary was the game where I had the most hats--I was the producer, and also contributed to the design and writing of the game. In Symon and Stranded in Singapore I was a bit more of a client and had a game director (Jason Beene for Symon, Rik Eberhardt for Stranded in Singapore) who helped me interface with the team. It makes my life a bit easier, because they dealt with things like scheduling and mentoring the students on game development practices, and allows me to focus on the design of the game and how it addresses what I want to achieve. But I love working with students, so in both cases I still worked closely with the designer and the rest of the team.

It is always tricky working with teams of students, because on the one hand the game is supposed to help me with my research, but on the other, they are learning. They are going to make mistakes--and they should be allowed to make mistakes every now and then. I have not completely figured out the process, but I have to say I love the energy of working with undergrads. I need to get my hands dirty along with them, because I also learn a lot from the team.

It's also a great way of putting my theories to the test, since I have to explain my philosophy and research to them and make it clear.

## Electron Dance / May 29, 2012

### **HM: What was the motivation behind these projects? Were they experiments or demonstrations of theory?**

They are definitely experiments because the goal is exploring the process. Even when the game or prototype does not quite come together, I still learn from making it. My theories are frameworks to understand games and to formulate specific problems; at times the goal of the game is to subvert them and put them to the test. The validation comes from releasing the games to the world and getting people outside the academic realm to play them. My goal is making games that are different, novel, and engaging; having people play them without realizing that they are research games shows that what I do is relevant and useful.

My general goal is to experiment within the adventure game genre, questioning preconceptions and looking for ways to innovate. I focus on them more as games, and how to bring together gameplay and story. Rosemary was a general experiment--at that point, I wasn't sure we could make a short adventure game with the resources we had at hand. The experiment was bringing new mechanics to adventure games--could we make a game where the core mechanic was remembering? What was the process?

Symon is an example of a design question that can take you to findings in a variety of fields. The premise at first was questioning my own theories--I argue that narrative puzzles have to be set up in a world that is consistent, that creates expectations, so that when the player encounters the puzzle, she can solve it according to the logic and affordances of the world. For example, in the game Loom the player interacts with the world through musical spells, which are learned through exploring the world. So I poked at my own theories: can we make a game based on a dream world, an unstable place where the logic doesn't quite make sense. We all know the feeling--what we do while dreaming makes perfect sense to us, but sounds crazy when we think about it what we're awake (if we remember what happened).

After some experimentation and prototyping, one of the approaches that seemed the most promising was creating procedurally generated puzzles, first because it would provide that sense of instability. It was also a promising design solution: the puzzle generation system would have to model the mind of whoever's dream the player is in. It also opened up a really exciting avenue for innovation in adventure games, since procedural generation would make the game replayable. There were several prototypes on the topic as preparation and Symon was the demonstration of how it would work.



Symon

## Electron Dance / May 29, 2012

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From Symon, we learned that procedural generation created a new type of adventure game: shorter but replayable, where the player figures out the world through several playthroughs. The problem was that the designer did not have good tools with which to create a procedurally generated adventure game and it took very long. So the next step was developing those tools and putting them to the test making another game. For that game, I posed an extra design problem--the randomness of the procedural generation works well in a dream setting, but could we use it for games based on the real world? Otherwise, our tools may only be good to create dream-like games.

The process of development of *Stranded in Singapore* addressed that question: the tools worked quite well but the design, however, was more difficult because we were simulating aspects of a real place (Singapore) and not everything fits in a procedurally generated design. It was lucky that food is an important part of Singaporean culture, and that fit well, but it was a hard constraint, and not all of the puzzles work well.

In spite of this, my focus is not on procedural generation, but rather in the conceptual design. One of my students is extending the development tools for his Master's thesis in Computer Science. My research focuses on finding the problems and creating solutions, and reflecting on the process--if in the process there are other pieces of research that can advance other fields, like computer science, that's great, it's the beauty of working in an interdisciplinary field like games.

What I've learned too is that as a researcher it is easy to constrain yourself too much, and that what may be good research may not result in the best game and vice versa. On top of that, teaching is also part of the process. Right now, I'm rethinking my methods, trying to figure out what fits my background best, what is the most satisfying process professionally, and how can I learn the most. I may have been trying to be too scientific about it and I'm mainly a humanist. So I'm looking at models of theorist practitioners in other media to learn more about their process, such as Eisenstein or Truffaut in film, or Anthony Burgess in literature, to look at how they combined their theories and criticism with the works they produced.

### **HM: In your view, how much impact does games studies have on the world of game development?**

Not all of game studies work is going to be relevant to industry and it does not have to. As academics we need the liberty to explore our field. Research does not always have to be at the service of industry. From the humanities standpoint, game studies helps us understand games better, and some of those insights may be superfluous to developers. Same with technological research (a novel technology may not be feasible to commercialize) or the social sciences (studying defunct online communities) where the research is excellent and advances knowledge, but may not have an immediate impact outside of academia. I have chosen to make my work relevant to practice but not everyone has to, and I'm well aware that only some aspects of my work can be made useful to developers.

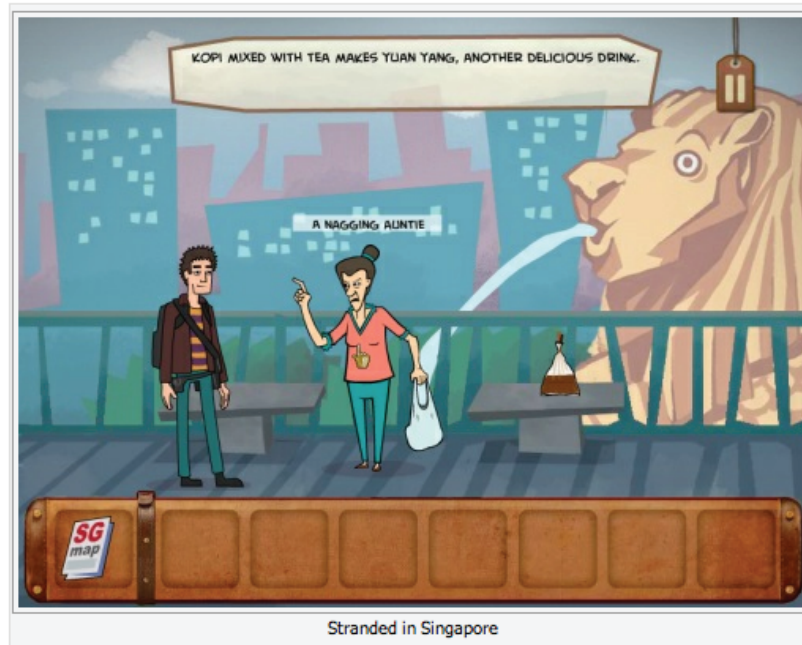
My friends in the industry very rarely read papers from academic conferences or journals, mostly because they do not have time. Papers are not the most efficient format to influence the industry, so we have to find other ways to communicate. One way would be having some more academics presenting at industry conferences. Until a couple of years ago, there was a GDC session called [Game Studies Download](#), which provided a selection of papers that were relevant to the industry; we need something like that back, for example.

As academics, we need to realize that if we want the industry to hear us, we have to make our work accessible to them. We can write a paper for [Game Studies](#), but we can also have a more accessible version in our blogs; not dumbing down our work but rather being careful with how we use jargon, for example, or thinking about how our research helps understanding games better. We cannot go into a room of developers and read a philosophical debate on the misunderstandings about Huizinga's and Caillois' work, which makes for a great session in a research conference like DIGRA, but would reaffirm the general scepticism that the industry already has towards academics. Making games is another way to gain some respect from industry--if you can link your theory with your game, it's more likely that they'll pay attention. Developers may not read papers, but they do play games.

I believe that the influence of game studies in the industry is barely visible now, but it'll be more prominent as the field grows and more game studies academics teach people who later go into game development. It'll also be more patent in smaller companies than in AAA companies where the contents may still be more controlled by publishers and big money. So I believe we're getting there.



## Electron Dance / May 29, 2012



### HM: Could you be tempted into larger projects with more commercial aspirations?

I keep saying that if I can deliver a game in eight weeks and a team of students who are new to development, then I'd be on fire if I could get to work for four months with a team of professionals. My goal is to be relevant, so applying what I know to larger commercial products would be a fascinating challenge and I would learn a lot from it. I'd love to have access to more resources, and face the challenges of bigger games.

One of the first things that I have to think of when making a game is my target audience, because they are the ones who will be making sense of the game. So far my goal has been to appeal to relatively niche audiences; reaching out to more people would be an interesting problem to tackle. I'd love to make a game that reaches larger audiences, and see what people do with them--that's the biggest kick I get from making games as part of my work.

On the other hand, I'd be more worried about working on a commercial product where my creative input is exclusively at the service of what some marketing department or team of executives thinks would sell, making clones of other successful games. So making larger experimental games for the market may be a fun challenge; a humongous game cash-in is not worth my time.

**HM: Thanks for talking to Electron Dance, Clara.**

## A CLOSED WORLD

<http://gambit.mit.edu/loadgame/aclosedworld.php>

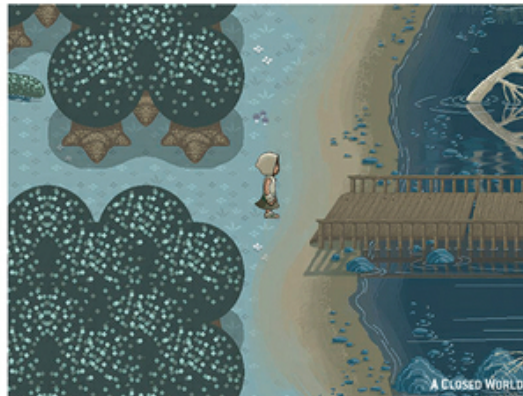
IT'S RARE TO SEE GAMES WRESTLE WITH COMPLEX, AND PERHAPS CONTROVERSIAL SOCIAL ISSUES. A CLOSED WORLD, WHICH COMES FROM A TEAM OF RESEARCHERS AT THE SINGAPORE MIT GAMBIT GAME LAB, DOES JUST THAT, AND OPENLY EXPLORES LGBT AND QUEER THEMES IN A JRPG FORMAT. IN THE GAME, PLAYERS TAKE CONTROL OF A YOUNG PERSON WHO DECIDES TO ENTER HIS VILLAGE'S FORBIDDEN FOREST. ALONG THE WAY, THE PROTAGONIST MUST BATTLE INTERNAL DEMONS THAT QUESTION WHAT WE CONSIDER "NORMAL" AND WHAT IT MEANS TO BE TRUE TO ONESELF. WE SPOKE TO PRODUCT OWNER TODD HARPER TO LEARN MORE ABOUT THIS INTROSPECTIVE TITLE.

**Tom Curtis:** Where did the inspiration for A CLOSED WORLD come from?

**Todd Harper:** Last September in 2010 there were a number of queer youth and bullying victim suicides in the news, including the story of Tyler Clementi. The mission of GAMBIT, the lab where I work, is to use game design to do research, and my background is both in game studies and queer theory. So I thought, "How would a game deal with talking about this stuff?" The eventual end product didn't have all that much to do with that issue (though I hope to come back to it someday), but that was part of the spark. Another influence was a story in the October issue of Edge magazine called "Playing It Straight" ([www.next-gen.biz/features/playing-it-straight](http://www.next-gen.biz/features/playing-it-straight)) that dealt with the question of where all the LGBT/queer content in games was. A lot of inspiration came from reading some of the reasons the people they spoke to there gave and going, "Alright. So how can we overcome some of this?"

**TC:** To what extent did the team draw from personal experience when creating the game?

**TH:** This is a difficult question to answer. I know my own past experience went into discussions I had with the team about things like coming out and issues like that, as did one of the interns who identified as gay. I don't think that the game's content came as much from their actual personal experience as it did from the team making a big effort to come to grips with what the issues involved with being a queer person even are. They spent a lot



of time in the first few weeks just brainstorming and sharing ideas about what that meant.

The room they were in at GAMBIT has a glass wall that can be written on with dry erase marker. The team drew this amazing brainstorming thing that was dubbed The LGBT Spider, and it took up the entirety of the eight-foot high wall by the end of the project, having morphed into the LGBT Kraken. There's this big, amorphous concept of "the LGBT experience" that they—like any other dev team—had to wrap their heads around. We did a lot of mapping onto situations they did have experience with, and I think that worked out well.

**TC:** In general, how have audiences responded to the title? Were you surprised by how people reacted?

**TH:** Responses have run the gamut. There are players who really like everything, from story and gameplay on down. There are those who thought the gameplay was too simplistic, and the story was too cliché. And there's a lot of middle ground, which is the most common.

In all honesty, the tide of responses and coverage did take me by surprise; I expected a few mentions here and there, and that was all. But I think that sudden outpouring of interest says a lot about whether this was worth doing, and if it's worth it for other devs to try. I think it is. There's clearly a desire and an appreciation out there that needs to be addressed.

**TC:** While the team seems to openly acknowledge A CLOSED WORLD's underlying themes, the game itself is fairly subdued and ambiguous. Was this a conscious decision on the team's part?

**TH:** I'd say so. We had this constant battle with what we called "the hammer," where we come down with some top-heavy, word of God message about insert-LGBT-theme-here. Nobody likes that in a story or a game. Plus, our big conceit was this procedurally generated gender concept, where the genders of the people you meet (and in the backstory) are just picked for you at random. So, we needed a narrative that supported that, but that still got across the message we wanted to send, which is this

### Team

TODD HARPER  
Product Owner

ABE STIEN  
Game Director

SOPHIA YUEN SHU HUI  
Producer

LEX JOHNSON  
QA Lead

PRAVEEN NAMASIVAYAM  
Designer

BREE WESTPHAL  
Artist

PETER TAN  
Artist

KEVIN LAUGHLIN  
Artist

TRAN HUNG NGUYEN  
Programmer

JOVI TAN  
Programmer

CASEY MERHIGE  
Audio Designer

# Game Developer Magazine / January 2012

idea that being true to yourself is hard, and might require sacrifice, but in the end is a much better option than the alternative.

**TC:** *The game seems to focus more on its themes and message than it does gameplay itself. Why did you choose to emphasize narrative so heavily over the mechanics?*

**TH:** Before the summer we had a six-month prototyping period, where we worked over various ideas about the shape of the game. At first we really wanted to do all the work in a procedural way. We spent a lot of time looking at various parts of what a queer

individual's experience might be and saying "Okay, how can we turn this into a gameplay mechanic?" The real problem is we couldn't find one that was satisfying to us, and part of that was really just the huge amorphousness of grasping "a queer experience" in the first place.

Gameplay, a procedural thing, is about modeling ideas through (among other things) a system of rules ... but if we didn't have a compelling notion of "a queer experience," it'd be difficult to find a core mechanic that could express one. A question we'd constantly ask ourselves was "How do you establish a character, or a theme, or an idea as 'queer'

using primarily gameplay?" The answer we came to was that we couldn't ... not in the time allotted us, anyway. So in the end, we decided to let the narrative do the heavy lifting, ideologically speaking, and tried to focus on having the gameplay deliver and reinforce the narrative.

**TC:** *If you were able to go back and do one thing differently during the game's development, what would it be?*

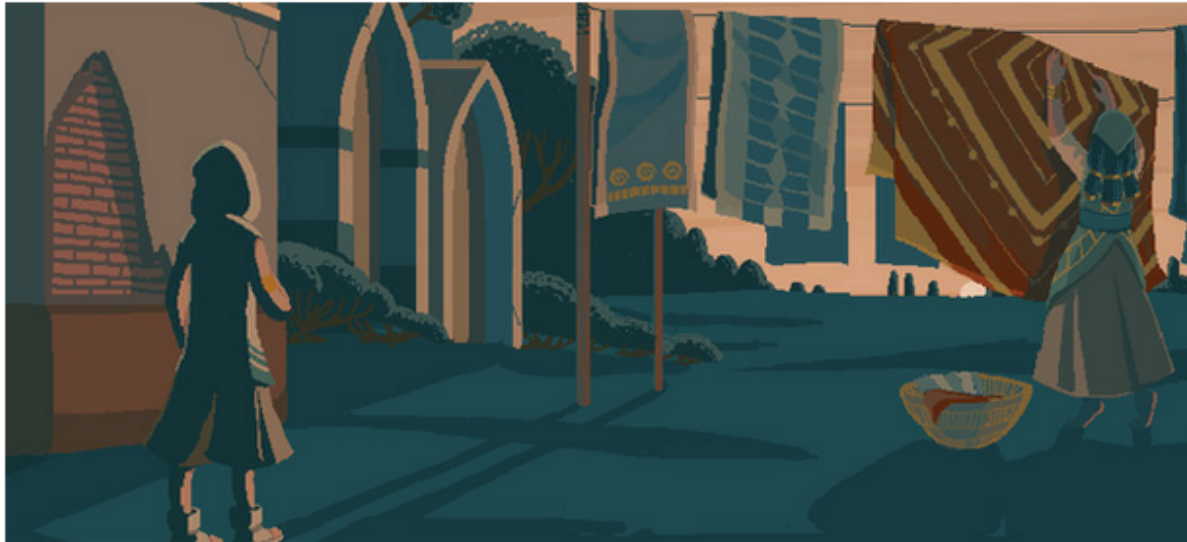
**TH:** I'd come into the process having already worked out the raw mechanics of our combat system. I think developing the combat took a really huge amount

of our very limited time, and a lot of it was fine-tuning and tail-chasing of ideas that were inevitably scrapped for the sake of simplicity. The problem was that dealing with that "queer content" issue I described was also a time-consuming thing, and we couldn't set the story down until we had it resolved, and the later we settled the story, the more stress went onto coders and art/music asset creators both. I think if we'd had combat more or less settled and had more time to work on the game's portrayal and packaging of the story and message, we could have added some additional nuance to it in the end. 



## This week's best free PC games

Lewis Denby at 02:00pm October 2 2011



Two of this week's free PC games deal with sensitive subject matters, and while one is more successful than the other, both are worth a look for being confident enough to stray into territory that games rarely touch. If you need a bit of light relief after these titles' heavy themes, though, there's a lovely hand-drawn platformer and a high-octane, 2D version of Prototype to get stuck into as well. Read on for this week's picks...

### A Closed World

*GAMBIT*. Play it on the [GAMBIT website](#).

## A Closed World

*GAMBIT*. Play it on the [GAMBIT website](#).



*A Closed World* is a simple JRPG-style adventure about what life can be like if you are homosexual. That's quite a rare thing in games, and I could probably reel off an entire column's worth of words on that alone. In this heavily metaphorical game, you venture into the woods to battle demonic versions of those who've caused you trouble in real life: your family, your partner's family, and your partner him/herself. After each face-off a beautifully drawn cutscene plays out, advancing the story as it does.

I'm not sure how I feel about the way that the theme is dealt with, so I don't want to talk too much about that. I'll just say that I'm glad a game has chosen to tackle this subject matter, and that I hope others will go on to tackle it in a more interesting manner. I also hope another, similar game comes along which is A) slightly longer, and B) more invigorating to play. You can get to the end of *A Closed World* in just a few minutes, even though it feels more epic in scope than a short-form title, and none of the battles are remotely challenging. Perhaps that could work as a statement itself, although I'm not sure it's the statement the game is trying to make.

Wandering around the woods between fights yields very little of intrigue, which is a shame. But this is still worth playing. After all, it's a game about what it's like to be a gay person in a hetero-normative world, and I'm not sure there are any other videogames about that.

## Bytten Ernie Awards 2012

### Special Award - Improviso

I was tempted to place this one in the Strangest Game Experience category, but that one was already hotly contested and Improviso warranted special mention. I didn't get the full experience I needed to enjoy it properly, as this is a game that requires more than one person - and, like The Restaurant Game before it, this game is a social experiment. Two people take on the roles of Director and Lead Actor, and make a movie. A pretty hokey sci-fi B-movie, and one filled with cardboard props.

Despite only having myself in the game, I had a good chance to look around. The detail is impressive - objects can be manipulated, special effects can be used, a range of sets are available and there are over a dozen possible "scripts" to go through. I hope MIT managed to get some useful data from their experiment. It was clearly a lot of work!



Read on for Steve's choices for the Bytten Ernie Awards 2012.



## IGF 2011 Review: Elude by Birdy Inc.

When video games first came into existence, they were about getting together and having a good time. Along the way, as the gaming medium has evolved, games have also become effective tools to educate players and communicate greater messages.

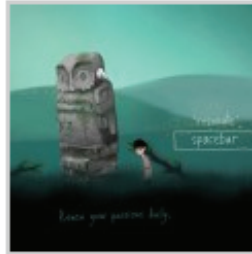
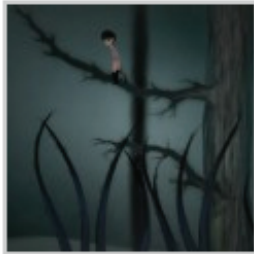


**Elude** is one of those games that is less about the gaming experience and more about trying to create an awareness in people that they may not have had before.

Elude, from developers Birdy Inc., is a serene platforming title that centers around teaching people about depression. The developers note that depression is a sometimes-crippling condition that is more complex than simply a state of sadness. This game attempts to put players in the shoes of a person suffering from depression, with the goal to resonate with as much of the environment as possible.

Sometimes the goal will be unattainable, as the main character will be too far gone to resonate with anything. Many times, the player will simply go with the flow. The main character has moments of extreme highs and lows. Extreme highs involve a section that involves bouncing atop as many leaves and flowers as possible to reach greater heights. Conversely, extreme lows will have the main character sucked into the earth, into a desolate, confined space. The idea is to give players the perspective of a person going through depression and to provide a greater understanding. In many ways, the game succeeds in that goal with the way the tone often shifts so dramatically.

Many will not stick with this game for long. There's no denying that the subject matter is a downer and with the game going at its own pace, players may not choose to go along for the entire ride. However, Elude proves itself as a valuable tool for creating empathy. While I may not always recognize someone going through depression, I now have a greater sense of the sense of disconnect that person endures in their everyday life.



Those looking to try out Elude can do so for free at the game's website. The next step for these students of Singapore-MIT GAMBIT Game Lab is to send Elude to the **2011 Independent Games Festival**, where it will be entered as a part of the event's **student competition**.



## ANOTHER 20 GAMES THAT MAKE YOU THINK ABOUT LIFE

Fans of philosophical games rejoice. We have a further 20 thought-provoking games for you to play.



Published by **Tasha** on **20th November 2010**

First we gave you **five**. Then we gave you **ten**. Now we are giving you 20 games that make you think about life. If you have developed a taste for games of a philosophical nature, then you should be in for a treat - we have some seriously innovative games here, everything from *Elude*, a game that explores the nature of depression, to *Ulitsa Dimitrova*, a tale about a street-urchin in Russia.

As with our previous lists, we have focused mainly on free games that you can play in your browser. But we have also thrown in the occasional downloadable game. These are free to play too. Before we get to the actual games, we would like to thank all our readers who suggested titles for this list. You made our job so much easier. And, of course, kudos to the game developers who created these games. Your creativity and craft are immensely appreciated.





## ELUDE

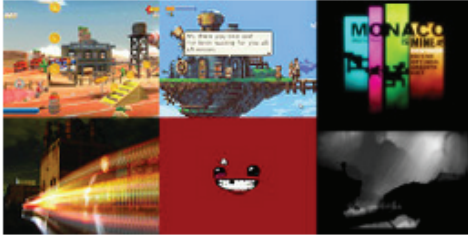
Developed by **Singapore-MIT Gambit Game Lab**, **Elude** is a dark, atmospheric game that aims to shed light on the nature of depression. You play a little guy exploring a beautiful yet forbidding world. The world has three distinct levels, each a metaphor for a different mental state.

The forest that you start the game in represents a normal mood. You can ascend to a higher plane - happiness - by climbing the trees in the forest. From, here you can leap joyously up into the sky by jumping on floating flowers and leaves. The leaves and flowers disappear after you have touched them and eventually none are left to keep you aloft and you plunge down into the third game area: depression.

This is a gloomy underground cavern, with a sticky muddy base that sucks you down. The first time you end up in this dark place, it is quite simple to escape, but as you progress through the game, you will end up here again and again, and each time you will find it more difficult to drag yourself out of. Elude is a mesmerising gaming experience with a serious message. Play it [here](#).

## IGF Submission Picks: 'Shadow Shoppe' and 'Hell is Other People'

Posted by: Arsen Nazaryan Category: Editorial, Featured Date: February 1, 2010



As the day of the next Independent Games Festival draws nearer, the finalists prepare for an incredible experience at the Game Developers Conference in March. On the other hand, we at DIYgamer are still sifting through the list. Last year, we began a countdown to the Independent Games Festival. The way this works is easy: we simply select

games at random from the lengthy (originally 306, then reduced to 301) list of IGF submissions and discuss what they're about and how they play. For this week's column, I played through a memory game unlike any other in *Shadow Shoppe* and a little shooter with a very unique twist in *Hell is Other People*.

Before starting this I want to emphasize that this is only meant to give you my impressions and perhaps that extra kick to try out some of the IGF submissions, whether they be these or any of the other 301. I assure you, you will discover that there is something unique about each and every game. And hey, if you're lucky, some of them (like these) are even playable for free! All right, without further ado, here are this week's picks.

**Where is fat? I can't find fat in this list of adjectives.**

That's because *Shadow Shoppe* is not centered around physical descriptions. Well, in a



sense, it is: you are shown a shadow and must select whatever trait you believe describes that shadow. After going through a number of them, the game will provide you with the trait(s) you chose and you are then tasked with picking out the shadow you originally applied them to. Sounds easy? At first, maybe.

When you make it through the first couple stages of the game, however, you realize that it truly is a difficult task. For one thing, the

adjectives aren't words such as short, fat, thin, etc. (for the most part, at least) but instead are along the lines of wealthy, sloppy, frail, etc. These are characteristics and traits of somebody that aren't easily described or attained through the physical shape of a shadow. Obviously, Singapore-MIT Gambit Game Lab's creation shines for this one very reason: it's an experiment and an assessment. *Shadow Shoppe* was created "with the intention to collect data on how people associated character traits with body shapes." That being said, this is the easiest way to take part in an experiment. How's that for experimental gameplay?

## MIT lab helps designers reimagine video games



Anna Loparev, of Wellesley College, at GAMBIT's lab at MIT. (John Tlumacki/Globe Staff)

By Mark Baard

Globe Correspondent / March 8, 2010

Don't bother asking Abe Stein whether he believes video games qualify as art.

"The answer," he said, "is an obvious 'yes.'"

Stein's office at the Singapore-MIT **GAMBIT** Lab in Cambridge reflects his commitment to the medium. Guitars line one wall in the long, windowless workspace. A piano and several PC work stations fill the rest of the room. It is where Stein, **GAMBIT**'s audio director, creates scores and sound effects for games that researchers develop in the lab.

**GAMBIT** - an acronym for gamers, aesthetics, mechanics, business, innovation, and technology - could be minting superstar developers, much in the way the University of Southern California turns out big-budget filmmakers. Stein's studio work, for example, has been featured on the Cartoon Network's "Adult Swim." And before he joined **GAMBIT** at the Massachusetts Institute of Technology he was a sound designer for Blue Fang Game LLC, in Waltham.

And it's not like **GAMBIT**'s game designers are turning up their noses at the prospect of making money.

"We're not forsaking the commercialization of games," said Stein, noting the government of Singapore's support for **GAMBIT**.

Each summer, Singapore, a country generally considered to be among the most "wired" for technology, sends about 60 college students to the lab to learn to create video games.

The partnership between **MIT** and the government of Singapore is also intended to increase the worldwide appeal of games by engaging professionals from both sides of the globe. It's a departure from a common video game distribution model: Develop a game in Asia, exclusively, then translate it for Western audiences.

**GAMBIT**'s researchers, a collaboration of artists, historians, writing instructors, and educators, are mostly interested in breaking away from gaming conventions: the princess who needs rescuing, the shady merchant with the weapon you must get to survive the next chapter, the mushroom power-up.

They are also focused on teaching courses with heady titles like "Making Deep Games" and publishing papers such as "Bioshock: A Critical Historical Perspective."

"Everything done in the lab is based on some sort of research interest," said Eitan Glinert, who was **GAMBIT**'s first graduate student, in 2007.

At **GAMBIT**, Glinert created a PC game, AudiOdyssey, in which the player stars as a club DJ trying to get



people to dance. The goal is also to avoid getting the dancers so excited that they knock over the turntables.

Glinert said he deliberately emphasized audio quality over graphics, to discover whether "the visually impaired and the sighted can enjoy the same level and quality of game play," according to the objectives he listed on the AudiOdyssey download page. Researchers at **GAMBIT** are also conducting research into how people learn through playing games.

Answering such questions can pay off in the long term by improving the storytelling in games, said a **GAMBIT** postdoctoral researcher, Clara Fernandez-Vara.

"One of the Holy Grails [of video game development] is finding a way to give players the ability to generate their own stories," she said.

Fernandez-Vara - who teaches a humanities course at **MIT**, "Writing for Videogames" - last year published a mystery game, Rosemary, which avoids "the trite premise of the player character being amnesiac," according to her project description.

In Rosemary, the player solves the game's mystery through Rosemary's senses of smell and hearing, and by arranging objects to evoke memories for the character.

Like most of the other **GAMBIT** games that can be downloaded from the website, it is written for PCs.

Fernandez-Vara suggested that **GAMBIT** developers would also like to develop games for video game consoles, such as the Wii. But some console makers prefer to share their software development kits exclusively with video game publishers, whose games unfold with a predictability that they, and shareholders, find comforting.

Take, for example, [Electronic Arts Inc.](#), which last month reported 2010 third-quarter net revenue of more than \$1.24 billion. Its most popular titles were sequels: Left 4 Dead 2, FIFA 10, Madden NFL 10, and The Sims 3.

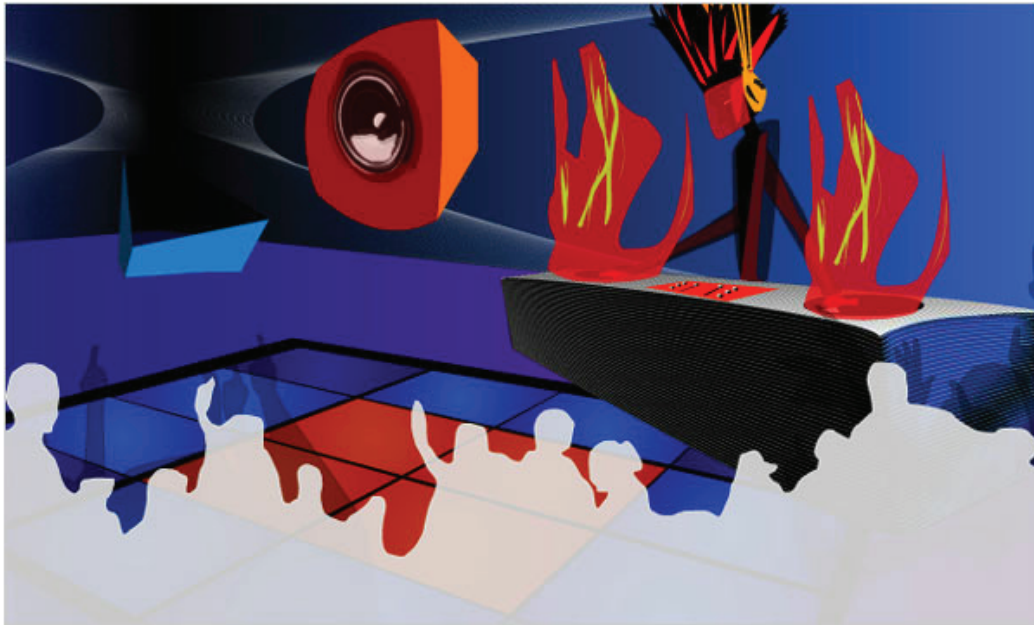
The big developers' astounding cultural influence also makes it hard to get young students to innovate, said **GAMBIT**'s lead game designer, Matthew Weise.

"I can't tell you how often students have said to me something like, 'What if I do a power-up that isn't a mushroom?' " said Weise, referring to the quick energy boosts that game characters get by touching, or consuming, an object (often, a mushroom). "It's still a power-up."

Weise and others at **GAMBIT** also reach out to students through weekly open houses, where they introduce them to some video game history and observe how they interact with **GAMBIT**'s own games.

BRIGHT IDEAS | MEDIA

## See Me, Hear Me: A Video Game for the Blind



Students have released a video game that makes it possible for visually impaired people to get in on the action. Match the clapping beats, and clubgoers dance.

By ABBY ELLIN




Published: December 26, 2008

The Singapore-[M.I.T.](#) Gambit Game Lab (“gambit” for gamers, aesthetics, mechanics, business, innovation and technology) brings together computer geeks of Cambridge and computer geeks of the Asian city-state. The point: to develop video games for the global market from the outset, not translate them from one continent to another.

### Education Life

Eitan Glinert, there as a master’s candidate in computer science, got to thinking about one market lost in translation. “People with disabilities were being left out of progress in the gaming market,” says Mr. Glinert, 26. For his master’s thesis, Mr. Glinert wanted to make a game that would work equally for the visually impaired and for the seeing, so they could play together.

A team of seven other students at the lab and a professor from the National University of Singapore pitched in. The result, AudiOdyssey, can be played with a keyboard or Nintendo Wii remote (to download, go to [gambit.mit.edu/loadgame/audiodysey.php](http://gambit.mit.edu/loadgame/audiodysey.php)).

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## New York Times / February 26, 2008

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The game stars a D.J. named Vinyl Scorchner whose objective is to get the people in his nightclub on the dance floor, by playing great music. "Choosing music as our central game theme works perfectly since both sighted and nonsighted users are equally familiar with music," Mr. Glinert says. But it wasn't enough to make the game playable by both groups; both groups had to have the same experience.

"You listen for clapping beats while the song is playing," he says. "Your task is to match these clapping beats."

If you hear a clap to your right, swing the remote to the right in time with the music, or hit the right arrow key. With a "beat" matched, the player adds more tracks, and more clubbers dance. "The more complex the song gets, the more crowded the floor gets," he says. One obstacle: overexcited clubbers might bump into his table. And onward to advanced levels of play.

Since the game came out last summer, Mr. Glinert has founded Fire Hose Games, in Cambridge, to develop video games with a positive social impact.

He wrote his thesis on his AudiOdyssey research. He got an A.