

THE CRITO REVIEW

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⋮ Gaming as Serious Business

When researcher **Celia Pearce** talks at dinner parties about her academic research, it “dismays people beyond belief.”

They don’t expect an academic to spend time trying to understand video games – the businesses and the players. But this is an \$11 billion industry, a size that has eclipsed the movie industry.

“Not only is it not trivial, it is well overdue for some serious study,” said Pearce, associate director of the Game, Culture and Technology Lab at UCI. Pearce has been an academic researcher for four years after spending 16 years in the industry as a game designer. Her consulting company, Celia Pearce & Friends, has served clients that include Walt Disney Imagineering, Universal Parks and Lego Toys.



“While most of the academic world is asleep, their students are learning to be active consumers of games.”

She talked about her work during a presentation, “Emergent Cultures in Online Games” at a recent CRITO Hour. A schedule of the informal talks on technology research along with slides from past presentations is posted on CRITO’s website at www.crito.uci.edu.

Pearce has examined types of video games and their players – the different market segments and how they behave. Her findings can be a lesson for game companies that want to broaden their appeal.

Though video games represent a large industry, one that reaches more customers every year, Pearce said that most companies have been slow to capitalize on all potential market segments, including women. “The Sims” is one game that has been wildly popular in part by attracting female players. It quickly became the top selling game of all time after it was released in 2000. But “The Sims” almost didn’t get made because it wasn’t like other popular games of its time.

Many video games are based on popular fiction, from “Star Trek” and “Star Wars” to fantasy books such as “The Hobbit” or games such as “Dungeons and Dragons.” “The Sims” game is very different. It takes players to a virtual neighborhood, where they interact with neighbors. With expansion packs, players can own pets in “Unleashed” or go on a “Vacation” or a “Hot Date.”

Pearce has researched what men and women want in video games. Men often prefer games that focus on shooting while women often prefer to “gather and collect.” Adolescent players, on the other hand, choose games with superheroes or other powerful characters to compensate for feeling powerless in their own lives. Pearce has also found that some families play games together on different computers.

“I don’t think companies have thought about this enough,” Pearce said of the segments and how players use the games.

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Paul Gray

Visiting Professor **Paul Gray** was packing boxes recently at UCI to move to a new office within the Graduate School of Management. It was a fitting activity for a man who has embraced changes, large and small, during his career. He has changed the focus of his work to follow his heart, and has changed the schools he's worked for in search of the most productive work environments. It's a lifestyle he'd like to encourage his students and other professionals to emulate.

"There are people who say you should stay at the same place forever, but I say you should try something new," Gray says. "It gives you a new challenge. You have a new cast of characters, a different set of problems."

Gray said that he has seen changes to departments that have degraded their quality or simply changed their focus away from his interests. People who stay in a bad job should take more control of their careers.

"They don't feel they have value on the outside," Gray said. "It's a self esteem thing, fear of the unknown."

Early on in his career he focused on nuclear and electrical engineering, though he had always been interested in computers. As his career evolved, he eventually gravitated toward researching computers. In 1983 he became founding chair of the School of Information Science at Claremont Graduate University. He worked there for 18 years before he retired in 2001, moving to Orange County with his wife, Muriel, to begin studying with the experts at CRITO.

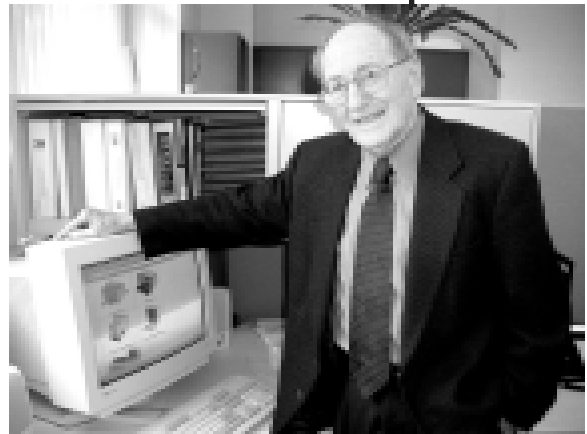
Gray had worked in private industry for 18 years, including nine at SRI International, an independent, non-profit research and development organization. He also worked as a professor for 34 years. In addition to Claremont, he was on the faculty at Stanford University, Georgia Institute of Technology, USC and Southern Methodist University. He received his PhD in operations research in 1967 from Stanford.

He currently focuses on research that deals with data warehousing, knowledge management and business intelligence. Last year he received the LEO Award for Lifetime Exceptional Achievement in Information Systems. It is among the highest honors in his field.

Gray supposes he'll always love learning about computers and plans to continue editing the "Communications of the Association for Information Systems," a journal published by his professional society.

In other words, changing to a new career that doesn't involve information technology is one move he just isn't willing to make.

"The only way to stay alive is to be where the action is," he explained. "I couldn't really see myself doing research in classical French. There's little going on." ■



To update your contact information, add a colleague or receive the CRITO Review electronically, please contact Karen Walsh at kmwalsh@uci.edu

CRITO Faculty and Staff News

CRITO Welcomes New Hires



Chun

Welcome to **Jane Chun**, who started working for CRITO in February. As CRITO's financial assistant, Ms. Chun works with everyone in the organization, performing one of the most important jobs: handing out money. She handles paychecks, purchasing, expense reimbursements and travel requests. She graduated from UCI in December 2002 with a degree in political science and has enjoyed working for the university. She has learned to work with professionals from diverse backgrounds. "I'm just trying to work and find out what I like to do," she said recently. "At CRITO, I deal with everybody, students, faculty and administrative staff. You have to adjust to people's styles."

CRITO welcomes Project Coordinator **Kathy Honda**, who started her job in April after working as a service coordinator for TAFFY, a non-profit organization that served low-income families in the Tustin area. In her new job, she provides executive-level, administrative support to CRITO Director Kenneth Kraemer. Among other duties, she proofreads manuscripts, including those that come from foreign university professors working on CRITO's Globalization and E-commerce project; does Internet research; helps with grant proposals; organizes meetings; and prepares course materials.

Tanya Nguyen was a welcome addition to the CRITO team when she started in March as a financial analyst. She comes to CRITO from UCI's School of Biological Science, where she was an assistant analyst. Ms. Nguyen continues to oversee payroll as she did in her previous position but now also has an expanded role, overseeing budgeting. She works with spreadsheets to monitor budgets, federal and private funding accounts, and also administers grants. "I'm analyzing a lot of information, just looking at the big picture," she said.



Nguyen

Awards Received

The Queen of Denmark recently decided to confer on **Niels Bjorn-Andersen** the title Knighthood of Danneborg for his research on information systems in Denmark. Bjorn-Andersen is a professor of Informatics at the Copenhagen Business School and a researcher for CRITO's Globalization and E-Commerce project. In January he published the CRITO paper "Globalization and E-Commerce: Environment and Policy in Denmark". It can be found at <http://crito.uci.edu/publications/pdf/GEC/DenmarkGEC2.pdf>



Kraemer

Ken Kraemer was elected a Fellow of the Association for Information Systems (AIS) and will receive the award at the International Conference on Information Systems in Seattle in December. There are only 20 AIS Fellows out of a membership of 3,600. The award is given to recognize individuals who have made outstanding contributions to the Information Systems discipline in terms of research, teaching and service. Professor Kraemer was recognized for research contributions in the area of the social, economic and policy aspects of information systems.

Consortium Announces Projects for 2003–04 Year

Professors recently pitched their new CRITO research projects at an Industry Advisory Board meeting. Their research appeals not only to academics but also is relevant to businesses.

CRITO relies on its partnership with industry for financial support as well as critical feedback. Professors and PhD students work with representatives from companies such as Microsoft, Boeing, Intel, the US Department of Defense, IDC and IBM at these biannual meetings. Company experts work on the research with professors from UCI and other universities on some projects. At the most recent IAB meeting held in June, eight new projects were funded (see below).

In addition, five projects by **Kevin Zhu**, **Vijay Gurbaxani**, **John Mooney**, **Ken Kraemer**, **Paul Tallon** and **Gloria Mark** received funding for continuing work. The next CRITO Consortium meeting will be held January 29–30. A full list of CRITO Consortium Projects is online.



Beckman

Professor **Christine Beckman** and PhD student **Taryn Stanko**, both of the Graduate School of Management, will focus on how the Internet and e-mail affect organizations. In particular, they will see if there is any change to employee

commitment, morale and work–family conflict.

Another team will find out whether e-mail does or doesn't improve family relations and decision making. This group will focus on families with members that are geographically apart because of work, whether in the military, a sales job or consulting project. Among other things, researchers will look at how technology affects morale and job commitment. Professor **Mary Gilly** of the Graduate School of Management will work on the two-year project with Professor **Mary Finley Wolfinbarger** of Cal State Long Beach and Professor **Hope Jensen Schau** of Temple University.

The same group is also investigating Internet adoption by older users. They want to find motivations and barriers for going online. Their findings, they say, will help companies reach this older market segment.

Professor **Alladi Venkatesh** of the Graduate School of Management plans to look at families with his study of the viability of a “family portal” on a tablet, personal computer. The computer is the size of a laptop without a lid and can work like a large, personal organizer for a household. It integrates updates from the Internet, such as ads and television schedules with tools found in Microsoft Outlook such as calendars and to-do lists.

Gloria Mark of the Informatics Department and **Steve Poltrock** of The Boeing Company will look at work relationships in their study of technology adoption. Specifically, they will focus on collaboration technology and compare two adoption models, one that occurred with an employee grassroots effort and the second that was mandated by company managers. Their final report should help organizations integrate new technology and promote its use.

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Choudhary

Professor **Vidyanand Choudhary** of the Graduate School of Management will research the transition from public to private, business-to-business marketplaces. The private marketplaces are owned by a supplier or buyer, for

buying and selling components as well as finished parts. With a team that also includes **Byungjoon Yoo** and **Tridas Mukhopadhyay**, both of Carnegie Mellon University, Professor Choudhary will develop guidelines for companies that are trying to decide whether to use a public or private marketplace.

Because companies have become increasingly reliant on e-learning, CRITO researchers plan to study the phenomenon and come up with guidelines for planning, developing and implementing e-learning programs. Among other things, they will look at how e-learning affects companies. Business Professor **Rebecca Grant** of the University of Victoria and Political Science Professor **James Danziger** of UCI will team up for the project.



Danziger

Researchers will also look at outsourcing of information technology services, such as customer care, logistics and human resources. **Vijay Gurbaxani** of the Graduate School of Management and **John Mooney** of Pepperdine University will recommend the best practices for oversight, integration and IT infrastructure management.



CRITO Consortium Earns NSF Renewal

The CRITO Consortium has received an award from the National Science Foundation to continue for an additional five years. The CRITO Consortium, the only NSF center at UCI and the only one in the nation focused on technology and society, will receive \$1.9 million in NSF and industry funds to support its research. CRITO is a collaboration of the Graduate School of Management and the Schools of Information and Computer Science, and Social Sciences. During its second five-year iteration, the Consortium will be lead by Professor Vijay Gurbaxani. Ken Kraemer will continue to be the Director of CRITO.

For more information on the CRITO Consortium, contact Karen Walsh at kmwalsh@uci.edu or (949) 824-1323.

CRITO Publications

Professor **Leysia Palen** of the University of Colorado at Boulder collaborated with Professor **Paul Dourish** of UCI's School of Information and Computer Science on the article "Unpacking Privacy for a Networked World," which they presented at the conference "Human Factors in Computing Systems" in April in Fort Lauderdale. In this paper they outline their model for understanding the impact on personal privacy of readily available networked technologies. Drawing on the work of social psychologist Irwin Altman, they propose a model for privacy that is a dynamic process of boundary regulation. The paper can be found at <ftp://ftp.ics.uci.edu/pub/jpd/papers/2003/chi2003-privacy.pdf>.

Professor Dourish's article "Sociotechnical Requirements Analysis for Clinical Systems" was recently accepted for publication in the journal "Methods of Information in Medicine." It was coauthored with Professor **Madhu Reddy** of the University of Missouri-Rolla, Professor **Wanda Pratt** at the University of Washington and Dr. **Michael Shabot** of Cedars-Sinai medical center. The article draws on a CRITO-funded look at collaborative research in medical practices. The article shows the importance of augmenting the traditional clinical trials model for developing medical systems. The authors advocate relating technology use to the organizational, social, and cultural settings within which the technology is deployed and used. The paper can be found at <ftp://ftp.ics.uci.edu/pub/jpd/papers/2003/mim-sociotechnical.pdf>.

Professor **Imran Currim** of the Graduate School of Management was recently nominated for the 2003 American Marketing Association Paul E. Green Award for best paper published in the *Journal of Marketing Research* in 2002. The article compared new approaches to estimating customer-preference models. He was also recently appointed to the editorial board of the journal. Professor Currim will soon publish a

paper on the behavioral differences between consumers who shop online and those who use traditional supermarkets. The paper is based on household purchase data recorded by IRI and Peapod. It will be published in the inaugural issue of the *International Journal of Internet Marketing and Advertising*. Copies of these and other papers can be found at <http://web.gsm.uci.edu/~currim/publications.htm>.

Professor **Paul Gray** of the Graduate School of Management is coauthor of a prize-winning paper in the Society for Information Management's 2003 Paper Awards Competition. The paper, "Vigilant Information Systems for Managing Enterprises in Dynamic Supply Chains: Real-Time Dashboards at Western Digital," is coauthored by **Bob Houghton** and **Donegan** and **Ashish Joshi**, all of Western Digital; and **Omar El Sawy** of the University of Southern California. It will be published in *MIS Quarterly Executive*.

Professor **Alfred Kobsa** of the School of Information and Computer Science presented his paper, "Performance Evaluation of User Modeling Servers Under Real-World Workload Conditions", at the Ninth International Conference on User Modeling in Johnstown, Pa., in June. It received the Best Evaluation Paper Award. The article can be found at <http://www.ics.uci.edu/~kobsa/papers/2003-UM-kobsa.pdf>.

In July, Professor Kobsa presented a paper at the Third International Conference on Knowledge Management in Graz, Austria, and two papers at the Sixth International Conference on Information Visualization in London. Both detail his CRITO-funded research on Information Visualization Systems. The papers can be found at <http://www.ics.uci.edu/~kobsa/papers/2003-KIV-kobsa.pdf>, <http://www.ics.uci.edu/~kobsa/papers/2003-IV-kobsa.pdf> and <http://www.ics.uci.edu/~kobsa/papers/2003-IV-mark-kobsa.pdf>.

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In August, PhD student **Mark Bergman** of the School of Information and Computer Science successfully defended his dissertation, "Understanding Ecologies of Large Scale System Requirements using the Authority-Activity Model: *In Situ* Requirements Analysis of the New Millennium Program." His dissertation committee was comprised of UCI professors **Gloria Mark** and **Alladi Venkatesh** and **Kalle Lyytinen** of Case Western Reserve University.

Walt Scacchi and his colleague Professor **Les Gasser** from the Graduate School of Library and Information Science at the University of Illinois, Urbana-Champaign received a new, two-year collaborative research grant from the National Science Foundation. The two will investigate the processes and practices of continuous redesign of open-source, software systems. They will also hold a national research workshop this fall on the subject. Professor Scacchi also presented the keynote address on "Software Process Modeling and Simulation" at the ProSim'03 Workshop held in May in Portland. He was an invited speaker at the National Science Foundation Workshop on Managing Knowledge-Intensive Dynamic Systems held in September in Baltimore.

Political Science Professor **James N. Danziger** and PhD student **Michael J. Jensen** will publish an article, "Political Science and HCI," in the Encyclopedia of Human-Computer Interaction. The article details intersections between the study of political science and the study of human-computer interactions. The pair examines whether the Internet helps mobilize individuals and groups; or reinforces existing inequalities in political participation. The article also explores the use of the Internet by political parties and government agencies, online political deliberation, and the use of the Internet for fighting wars. ■

Gaming as Serious Business

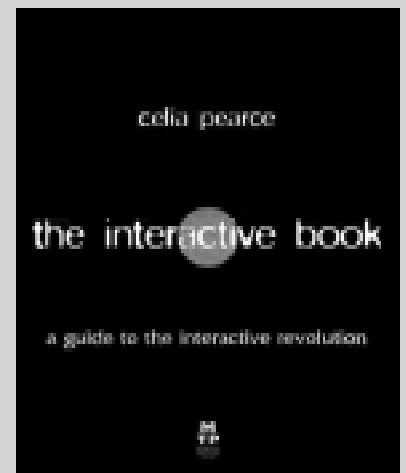
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In addition to differences among players, Pearce has observed differences in the way the music and game industries have responded to hackers. Game companies have capitalized on the work of a small percentage of the most talented players, who create their own skins (game-based characters), levels (new levels for a game) and "mods" (modifications can sometimes look like entirely new games). Their work has boosted sales for game production companies because players who want to use the offshoots need to purchase the games they are based on. With this profitable relationship, content is produced and sales increased at no cost to the video game companies.

The company Westwood Studio/EA appreciates its most talented modifiers so much that they invited the best to work with a new game, "Earth and Beyond", before it was released. As a result, game modifications were done and ready to boost sales before the game hit the shelves. In another example, the game "Counter-Strike" was produced by modders, or game modifiers, from the game "Half-Life." The original game didn't catch on as much as its mod. The video game production company didn't mind because, again, players had to buy the original game to play its modification. Valve eventually bought the modification and now sells it.

Pearce said that when she is talking to people for the first time about her career, they often ask about a connection between youth violence and video games. She believes contact sports such as football create more real-world violence than video games but don't carry the same stigma, she responds.

"That is the most common question that I get. It's also the stupidest because nothing in life has a black and white answer." ■



CRITO in the News

Professor **Sharad Mehrotra** of UCI's School of Information and Computer Science was mentioned in the September 18th issues of the **Orange County Register** and **Los Angeles Times**. He is the chief researcher in a \$12.5 million project to improve the use of technology to respond to disasters. The National Science Foundation grant is one of the largest of its kind awarded by the agency this year. Mehrotra's work was profiled in the summer 2003 edition of the CRITO Newsletter.

Visiting Researcher Roman Beck, Claudia Hussler, and Professor Gloria Mark.



CRITO Luau

CRITO recently enjoyed a get-together of faculty, researchers and staff at Ken Kraemer's hillside home.



Critonians VC Choudhary, Sanjeev Dewan, and Jason Dedrick.