

## RAMA C. HOETZLEIN

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## SHORT BIOGRAPHY

Rama Hoetzlein is Professor of Media Studies in the Department of Architecture and Media Technology (Medialogy) at Aalborg University, Copenhagen. From 2004 he developed a prototype for a novel graph database, Quanta, to explore representations of semantic knowledge. Recently, he has worked in the digital humanities with Alan Liu (Department of English, UCSB) as co-director on an NEH grant and lead scientist to develop an experimental social network for living and historic persons. In 2007, his dissertation with the Media Arts and Technology Program at the University of California Santa Barbara focused on technology to support creativity in interactive arts. Rama has exhibited media art works internationally in Beijing, Genève, Seattle, New York and Copenhagen. His current research focuses on knowledge systems and intelligent agents.

## EDUCATION

- Fall 2010 Ph.D, Media Arts and Technology, University of California Santa Barbara  
*Imagination in Media Arts: Technological Constraints and Creative Freedom*
- 2004-2007 MS, Media Arts and Technology, University of California Santa Barbara  
*The Organization of Human Knowledge: Systems for Interdisciplinary Research*
- 1995-2001 BA, Computer Science, Cornell University. *Computer Graphics*  
BFA, Fine Arts, Cornell University. *Robotic Sculpture*

## PROFESSIONAL EXPERIENCE

- 2010 **Department of Architecture and Media Technology** *Assistant Professor*  
Aalborg University at Copenhagen, Denmark. Medialogy Program.  
Developed a research program and curriculum in computer graphics, with topics and supervision of students in motion capture, animation and modeling.
- 2009 **DreamWorks Animation** *R&D Rendering Intern*  
Contact: Andrew Kunz (Rendering Manager), Bruce Tartaglia (Senior Eng)  
Worked with the rendering team on improved material surfacing using MetaSL.  
Developed new shaders and render testing in collaboration with Mental Images.
- 2008-2009 **Transliterations Bluesky Group**, Department of English *Lead Scientist*  
Contact: Prof. Alan Liu, ayliu@english.ucsb.edu, U. of California Santa Barbara.  
Project lead for a digital humanities collaboration between Media Arts, English (UCSB) and the Univ. of Victoria, Canada INKE Project (Ray Siemens), developing a novel social networking site for historic persons and literature.

- 2007 **Interactive Digital Multimedia**, NSF IGERT *Research Fellow*  
 Contact: Prof. Tobias Hollerer, holl@cs.ucsb.edu, U. of California Santa Barbara  
 Developed graphics solutions for real-time cluster rendering on tiled displays for the Allosphere, a 30 ft. immersive display at UC Santa Barbara.
- 2005 **George Legrady Studio**, Seattle Library Visualization *Production Lead*  
 Contact: Prof. George Legrady, legrady@arts.ucsb.edu  
 Ten year project for real-time visualization of library circulation materials, displayed on six, 42" networked displays using custom software. Still running.
- 2001-2004 **Game Design Initiative at Cornell University** *Co-founder and Lecturer*  
 Contact: Professor David Schwartz, dis@mail.rit.edu, (Rochester Inst. Tech)  
 Developed GameX, an instructional game engine, and taught intermediate and advanced courses with students from both arts and engineering.
- 2001-2004 **Gene Network Sciences** *Interface Designer*  
 Biotech Company. Ithaca, NY  
 User interface design and implementation of a graph compiler for biological modeling software. Design of automatic line-routing algorithms, model parsing, and 2D graphical user interfaces.
- 1997-1999 **Houston Research Group, Dept. of Physical Chemistry** *Software Engineer*  
 Contact: Prof. Paul Houston, Cornell University  
 Created embedded systems for photo-chemical imaging of molecular reactions, including real-time peak detection in assembly language.

## ACTIVITIES & AWARDS

- 2011 NEH Digital Humanities Startup Grant, Co-Director with Alan Liu (PI).  
 for the Research-Oriented Social Environment (RoSE), UCSB
- 2010 Speaker and Co-Host. Transliterations Rose Design Charrette, Digital Humanities  
 Invited guests include Geoffrey Bowker, Tad Hirsch (Intel), Johanna Drucker
- 2007 and 2009 Digital Humanities Summer Institute (DHSI), University of Victoria, Canada.  
 Participant in the Visualization and Data Analysis workshops.
- 2007 Participant. Text Encoding Seminar, University of California Santa Barbara
- 2006 Guest Speaker. Moorpark College Multimedia Festival, April 29th, 2006
- 2006 Guest Speaker. UC DARNET, Digital Arts Research Network, March 4th, 2006
- 2006 ACM Multimedia 2006, Art Exhibitions Coordinator /w George Legrady, UCSB
- 2004 Award for Outstanding Contribution to Education  
 Game Design Initiative at Cornell University (GDIAC), Ithaca, NY

## PUBLICATIONS

- 2012 Hoetzlein, "Visual Communication in Times of Crisis: The Fukushima Nuclear Accident", *Leonardo Journal of Arts, Science and Technology*. (Forthcoming)
- 2012 Eric Chuk, Rama Hoetzlein, David Kim, Julia Panko. "Creating Socially Networked Knowledge through Interdisciplinary Collaboration". *Arts & Humanities in Higher Education: An international journal of theory, research and practice*
- 2011 Hoetzlein, R. "Imagination in Media Arts: Technological Constraints and Creative Freedom". *Ph.D Dissertation*. University of California Santa Barbara, December 2011.
- 2009 July Hoetzlein. "Subjective Media: A Historic Context for New Media in Art", *Fourth International Conference on the Arts in Society*. Venice, Italy. 2009
- 2009 Oct Hoetzlein. "Alternatives to Author-centric Knowledge Organization", *Implementing New Knowledge Environments (INKE 2009)*. Victoria, Canada.
- 2009 Feb Hoetzlein and T. Höllerer. "Interactive Water Streams with Sphere Scan Conversion". *ACM Interactive Graphics and Games (i3D) 2009*. Boston.
- 2009 Mar Hoetzlein. "Real-Time Water Dynamics: Practical Rendering of Fluids" *Game Developers Conference (GDC) 2009*. San Francisco, CA.
- 2009 Jan Hoetzlein and D. Adderton, "MINT/VXF: A High-Performance Computing Framework for Interactive Multimedia." *Future of Media Arts, Science and Technology Workshop (MAST) 2009*. UCSB
- 2008 M. Turk, T.Höllerer, S.Arisona, J.Kuchera-Morin, C. Coffin, R. Hoetzlein, et al. "Creative Collaborative Exploration in Multiple Environments" *Association for the Advancement of Artificial Intelligence, 2008 Symposium*
- 2007 Hoetzlein. "Quanta: A Platform for Multiple Visualizations of Human Knowledge". University of California Santa Barbara. First lecture in the *Transliteracies Paradigm Lecture Series*.
- 2007 Hoetzlein. "The Organization of Human Knowledge: Systems for Interdisciplinary Research". *Master's Thesis*. U. of California Santa Barbara
- 2005 Hoetzlein and D. Schwartz, "GameX: A Platform for Incremental Instruction in Computer Graphics and Game Design." *ACM SIGGRAPH Educators Program 2005*. Los Angeles, CA.
- 2003 Hoetzlein and D. Schwartz, "Computer Game Design as a Tool for Interdisciplinary Education", *American Society for Engineering Education*

## SELECTED PROGRAMMING PROJECTS

- 2010      **Data Mining Guttenberg and Yago** (XML and Perl Scripting)  
Project to automatically mine roughly 10,000 authors and documents, parse specific knowledge, and generate relationships for import into the Rose platform.
- 2008-2011      **Rose:** Research-oriented Social Environment (*Ruby on Rails, Flex/Flash*)  
Online social network of contemporary and historic persons, currently in use at the University of California Santa Barbara.
- 2005-2007      **Quanta:** Hypergraph Database and Visualization system (*C++, OpenGL*)  
A system for the large scale organization of human knowledge, Quanta allows for easy navigation of historical and social knowledge across disciplines.
- 2007      **MINT/VFX:** Cluster Rendering on Tiled Display (*C++, Winsock, OpenGL*)  
Network-based real-time renderer using multiple GPUs.
- 2008      **Social Evolution:** Version Beta, Centre pour L'image Contemporaine  
Gevena, Switserland. Oct 31-Dec 15th, 2008, (*C++, OpenGL*)  
Social Evolution is an experiment in simulated societies. Digital characters walk, move, eat, run and sleep while also producing offspring that evolve these traits.

## ART EXHIBITIONS

- 2011      *EcoPlayer*, Ecological Audio Environment. Interactive mixing of animal sounds  
Copenhagen Zoo, Copenhagen, Denmark
- 2010      *The Bones of Maria*. Generative organic art.  
The Cultor, <http://www.cultor.it/Pinacoteca2.html>. Torino, Italy (Online exhibit)
- 2009      *Presence*. Interactive, 6-screen, 360° panoramic photographs  
Davidson Central Library, University of California Santa Barbara
- 2008      *Social Evolution*. Experiments in evolutionary crowd simulation.  
Version Bêta. Centre pour L'image Contemporaine, Genève, Switzerland.
- 2007      *Lifecycles*. An interactive, natural water cycle between living and virtual objects.  
2nd International Arts and Science Exhibition. Beijing, China.
- 2007      *Intelligent Things*. Video collection of robotic and animated works  
Machine Project, DorkBot So. Cal. Los Angeles, CA.
- 2004      *Collective Morphology*. Collaborative interaction with generative forms.  
Gallery 1434, University of California Santa Barbara.
- 2001      *Creatures: Mechanical and Robotic Sculptures*. Tjaden Gallery, Cornell Univ.  
Outstanding Student Achievement Award in Contemporary Sculpture. ISC

## TEACHING EXPERIENCE

- 2011 *Professor.* Advanced Animation and Motion Capture, Aalborg University  
2011 *Professor.* Computer Graphics Programming, Aalborg University  
2011 *Professor.* Computer Graphics and Digital Scenography, Aalborg University
- 2008 *TA.* Introduction to Computer Graphics, Tobias Hollerer, UCSB.  
2006 *TA.* Introduction to Mechanical Engineering, ME 10, Casey Hare, UCSB  
2005 *TA.* Visual Art Literacy, Art 1A, Helen Taschian, UCSB, Spring '05  
2004 *TA.* Digital Art Strategies, Art 22, George Legrady, UCSB, Fall & Winter '04
- 2005 *Guest lecturer.* Sculpture and Interactive Art, MAT5940 with Dan Overholt  
2005 *Guest lecturer.* Kinetic Art, Art 106, Advanced Sculpture with Jane Mulfinger
- 2004 *Lecturer.* Advanced Topics in Game Design, CS490, Cornell University  
2003 *Lecturer.* First official course in Game Design, CS490, Cornell University
- 1999 *TA.* Media Art Studio 391, Interdisciplinary course at Cornell University  
1998 *TA.* Introduction to Digital Art, Mediartspace Digital Lab, Cornell University