

RAMA C. HOETZLEIN
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CURRICULUM VITAE

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BORN: Ithaca, NY. December 15th, 1975

SHORT BIOGRAPHY

Rama Hoetzlein is a media artist and computer scientist working in the areas of surrealism, artificial intelligence and computer graphics. He completed a BFA in Fine Arts and a BA in Computer Science at Cornell University in 2001, with thesis works on robotic and mechanical sculpture. From 2001 to 2004, Rama co-founded the Game Design Initiative at Cornell University with David Schwartz (CS), while also developing user interfaces in biotech. In 2007, Rama completed a master's thesis on knowledge organization and visualization with the Media Arts & Technology Program at the University of California Santa Barbara. He has shown work at the 2nd International Beijing Arts & Science Exhibition at Tsinghua University and lectured extensively on interdisciplinary topics. Rama's current research interests lie in the areas of surreal biology, artificial intelligence, and cognition.

EDUCATION

- 2004-2008 Ph. D., Media Art and Technology, University of California Santa Barbara
Dissertation: *Surreal Biology*
MS, Media Art and Technology, University of California Santa Barbara
Masters Thesis: *The Organization of Human Knowledge*
- 1998-2001 BA, Computer Science, Cornell University - Computer Graphics
BFA, Fine Arts, Cornell University - Mechanical and Robotic Sculpture
Thesis: *Creatures: Mechanical and Robotic Sculpture*
- 1995-1996 Computer Science, New York University

PROFESSIONAL EXPERIENCE

- 2005 Seattle Public Library Visualization Project, George Legrady Studio, Prof. George Legrady
Production Lead. Software for data analysis and aesthetic visualization.
- 2001-2004 Game Design Initiative at Cornell University (GDIAC)
Co-founder, Lecturer and Outreach Coordinator.
- 2001-2004 Gene Network Sciences, Ithaca, NY
Software Engineer. User-interface and biological language software design.
- 1997-1999 Houston Research Group, Department of Physical Chemistry, Cornell University
Software Developer. Embedded design for visual detection systems in chemistry.
- 1998-2000 Mediartspace: Digital Media Lab, Department of Fine Arts, Cornell University
Lecturer, Systems Administrator.

PUBLICATIONS

- 2007 "The Organization of Human Knowledge: Systems for Interdisciplinary Research"
Master's Thesis. University of California Santa Barbara, Media Art & Technology
- 2005 Rama Hoetzlein and David Schwartz, "GameX: A Platform for Incremental Instruction In Computer Graphics and Game Design", *SIGGRAPH 2005*, Los Angeles, CA
- 2005 D. Schwartz, R. Rajagopalan. R. Hoetzlein, "Developing a Virtual Engineering Curriculum Via Computer Game Design.", *ASEE St. Lawrence Section Conference* Binghamton, NY. 2005
- 2003 Rama Hoetzlein and David Schwartz, "Computer Game Design as a tool for Interdisciplinary Education", *American Society for Engineering Education (ASEE)*, St. Lawrence Section Conference, Kingston, Canada. 2003.
- 1998 Bor-Yu Chang, Rama Hoetzlein, Julie Mueller, Joseph Geiser and Paul Houston, "Improved two-dimensional product imaging: The real-time ion-counting method". *Review of Scientific Instruments*, Vol 69, No 4, April 1998

AWARDS & HONORS

- 2006-2008 NSF Interactive Multimedia IGERT Fellowship
University of California Santa Barbara
- 2004 Award for Outstanding Contribution to Education, *Game Design Initiative at Cornell University (GDIAC)*, Cornell University, Ithaca, NY
- 2002 Best in Show, Bioinformatics. *VisualCell Bioinformatics and Modeling Software*, BioIT World Expo 2002 Winner with Gene Network Sciences, Ithaca (Primary Developer)
- 2001 Outstanding Achievement Award in Contemporary Sculpture, *Creatures: Robotic and Mechanical Sculpture*, International Sculpture Center (ISC) student award winner.

RESEARCH PROJECTS

- 2006 MINT
Mint is an open source multimedia framework designed to enable new media art and scientific research by providing a consistent structure as a broadly designed meta-library for C++ which integrates specialized libraries from different disciplines. MINT is developed as an NSF Interactive Multimedia IGERT project (2006-2008), and focused on real-time visualization, performance, sound and rendering in a range of environments.
- 2001-2005 GAMEX
GameX is an open source graphics engine designed to incrementally teach a range of concepts to students in engineering and the humanities. GameX allows for rapid development of student games by supporting both low-level graphics and high-level game objects (meshes, terrain, characters, etc.). GameX was used to found the Game Design Initiative at Cornell University in 2001 and was presented at SIGGRAPH 2005.
- 2005-2006 QUANTA
Quanta is a system for the large scale organization of human knowledge that allows for easy navigation of historical and social knowledge across disciplines. Quanta utilizes a semantic network and advanced representational grammars to maintain a core ontology (set of concepts). Quanta was developed as part of the master's thesis "The Organization of Human Knowledge: Systems for Interdisciplinary Research"

- 2005 **SOCIAL EVOLUTION**
 Social Evolution is a study in intelligent evolution. Character agents are introduced that engage in a range of social activities including walking, running, eating, harvesting food, and killing. With genetic algorithms individuals are then given the ability to adapt, resulting in complex social patterns such as clustering into towns, local sharing of resources, and social hierarchies such as caste systems.
- 2004 **COLLECTIVE MORPHOLOGY**
 Collaboration /w Eunsu Kang
 Human collaboration is often very different from other examples of natural collaboration. While many forms are designed with a specific goal (integrated circuits, electronics), the constructions of social insects such as the nests of termites, wasps and ants may not have an explicit mental goal but instead result from the localized activities of individual members. Collective Morphology is an interactive exhibit that allows participants to explore and create emergent forms.
- 2003 **BLOCKS**
 Collaboration: Mark Zifchock (Graphic design)
 Blocks is an experiment in abstract three-dimensional simulation. The Blocks world consists of atomic cubes that are capable of a variety of physical actions, including blocks that move, fall, hover and slide. Logic blocks allow groups of cubes to act as *and*, *or* and *not* gates. With a discrete grid-based physics engine, entire systems can be created that combine physical simulation with discrete computational behavior in a navigable world.

ART PRODUCTION & APPRENTICESHIPS

- 2005 *Seattle Library Visualization Project*, Seattle Public Library, Seattle, WA
 Technical Production Lead with Hungarian artist George Legrady
- 2005 *Seonang*, Seattle, WA and Seoul, Korea.
 Collaboration with Eunsu Kang, Wesley Smith and Graham Wakefield
- 1998 *N2Blak*, Alexandre de Folin Gallery, New York City, NY
 Digital Production with New York artist Marcia Lyons
- 1998 Selected Student Participant, Storm King Sculpture Park, Storm King, NY
 Invitation to special group apprenticeship with British artist Andy Goldsworthy

ART EXHIBITIONS

- 2007 *Intelligent Things*, Dorkbot SoCal 25. Machine Project, LA
- 2007 *Lifecycles*, 2nd Beijing International Arts & Science Exhibition, China
- 2006 *Social Evolution*, Digital Days Festival, Arlington Theatre, Santa Barbara
- 2005 *Timewave*, Gallery 1434, University of California Santa Barbara, CA
- 2004 *Energy & Entropy*, Gallery 1434, University of California Santa Barbara, CA
- 2004 *Collective Morphology*, Submitted to SIGGRAPH 2005. Exhibited at UCSB.
- 2001 *Creatures: Mechanical and Robotic Sculpture*, Tjaden Gallery,
 Cornell University, Ithaca, NY
- 1999 *Gigaspace*, Sibley Hall, Cornell University, Ithaca, NY

AFFILIATIONS

Social Computing Research Group, Univ. of California Santa Barbara
International Sculpture Center Member
ACM SIGGRAPH, Special Interest Group in Computer Graphics
ACM SIGKDD, Special Interest Group in Knowledge Discovery and Databases

SELECTED ACTIVITIES

2007 Participant. Text Encoding Seminar, University of California Santa Barbara
2006 Speaker. Moorpark College Multimedia Festival, April 29th, 2006
2006 Speaker. UC DARNET, Digital Arts Research Network, March 4th, 2006
2006 ACM Multimedia 2006, Art Exhibitions Coordinator /w George Legrady, UCSB
2006 Selected student participant, Digital Humanities Summer Institute, University of Victoria, Canada
2005 Guest lecturer. *Kinetic Art*, Advanced Sculpture, Jane Mulfinger, UCSB
2004 First official course. *Computer Game Design*, Cornell University
By special invitation of the Summer College Dean, CIS290
2002 First course of the Game Design Initiative. *Introduction to Game Design*, at Cornell University (GDIAC), CS490

TEACHING EXPERIENCE

Guest Lectures

2005 *Sculpture and Interactive Art*, Guest lecturer for MAT594O, with Dan Overholt
2005 *Kinetic Art*, Guest lecture for Art 106, Advanced Sculpture with Jane Mulfinger
2003 *Advanced Topics in Game Development*, CS490, Game Design Initiative at Cornell
2002 *Introduction to Game Design*, First Course of the Game Design Initiative at Cornell University (GDIAC), CS490, Cornell University

Teaching Assistantships

2006 Intro to Mechanical Engineering, ME 10, Casey Hare, UCSB
2005 Visual Art Literacy, Art 1A, Helen Taschian, UCSB, Spring '05
2004 Digital Art Strategies, Art 22, George Legrady, UCSB, Fall & Winter '04
1999 Media Art Studio 391, Interdisciplinary Course at Cornell University,
Marcia Lyons (Art), John Zissovici (Architecture), David Borden (Music),
1998 Introduction to Digital Art, Marcia Lyons, Mediartspace Digital Lab, Cornell University

Interdisciplinary Lectures with the Game Design Initiative at Cornell

2001-2004 Introduction to Computer Graphics
Advanced Topics in Computer Graphics
Artificial Intelligence for Computer Games
Physics and Collision Detection
Networking for Games
Early History of Video Arcade Games
The Medium of Video Games: From Arcades to Game Consoles
Violence in Video Games: Content in Social Context
Understanding Digital Art