

Andruid Kerne CV → contents

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<http://ecologylab.net>

- 1 essential
- 13 educator
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interface ecology lab

EDUCATION

1995-2001	New York University , New York, New York <i>Ph.D. Computer Science</i> Dissertation title: “ <i>CollageMachine</i> : A Model of 'Interface Ecology'”. Advisor: Academy Award winner Ken Perlin. Committee includes: director and TDR editor Richard Schechner, Guggenheim Fellowship winner Barbara Kirshenblatt-Gimblett.
1991-93	Wesleyan University , Middletown, Connecticut <i>M.A. Music, Composition</i> <i>The Economic Survival Rite of Passage</i> : a multimedia opera of musicians, actors, dancers & digitally sampled found sounds. Advisors: new music pioneers Anthony Braxton (Macarthur Fellowship) and Alvin Lucier.
1977-82	Harvard University , Cambridge, Massachusetts <i>B.A. Applied Mathematics / Electronic Media</i> Created a new sub-concentration in Applied Mathematics. Advisor: Anthony Oettinger.

ACADEMIC POSITIONS

2008-	Texas A&M University , College Station, TX <i>Associate Professor, Computer Science and Engineering</i>
2002-08	Texas A&M University , College Station, TX <i>Assistant Professor, Computer Science</i>
2000-01	Tufts University , Medford, MA <i>Visiting Professor, Computer Science</i>
1997	Parsons School of Design , New York, NY <i>Lecturer, Interactive Art</i>

GRANTS

<i>External</i>	\$1,700,487
2008-13	Kerne, A., CAREER: A Multimodal Mixed-Initiative Research Notebook for Information Discovery, National Science Foundation, Intelligent Information Systems: Human Centered Computing, \$530,000.
2008-12	Kerne, A., Location-Aware Non-Mimetic Simulation Game for Teaching Team Coordination, National Science Foundation, Intelligent Information Systems: Human Centered Computing, \$475,806
2011	Kerne, A., Interface Ecology Lab, S.IM.PL: Support for Information Mapping in Programming Languages, Google Summer of Code, \$22,000.
2010	Kerne, A., U.S. Participation in ACM Multimedia Interactive Art Exhibition: An Interactive Renaissance of Color, National Science Foundation, \$10,000.
2007-8	Kerne, A., Non-Mimetic Simulation of Fire Emergency Response Team Cognition Stress through a Mixed Reality Game, National Science Foundation, \$96,892.
2006-9	Kerne, A., ALT: Promoting Information Discovery in Learning: Mixed-Initiative Composition of Hybrid Image-Text Surrogates, National Science Foundation, Advanced Learning Technologies, \$198,940.
2007-9	Kerne, A., REU Supplements for ALT: Promoting Information Discovery in Learning: Mixed-Initiative Composition of Hybrid Image-Text Surrogates, National Science Foundation, \$83,090.

2004-5	Kerne, A., Smith, S.M., SGER: Extending Working Memory Functions by Presenting Bookmark and Result Sets as Temporal Visual Compositions, National Science Foundation, \$84,295.
<i>Internal</i>	
2005-7	Kerne, A., Gutierrez-Osuna, R., Song, D., Perceptive Sensor Networks Lab, Texas A&M College of Engineering, \$80,000.
2006-7	Kerne, A., Visual Representations to Promote Creativity in The Design Process, Katrina-Rita Locative Media Dialogue, Texas A&M Arts Academy, \$9,000.
2004-5	Kerne, A., Enhanced Generation of Navigational Information Compositions through Semantic Clustering, Texas A&M Humanities Informatics Initiative, \$16,000
2004	Leggett, J., Shipman, F., Kerne, A., Computational Media Lab, Texas A&M CAF, \$38,398.

PUBLICATIONS - JOURNAL

(*) indicates my student

1. Toups, Z. O. (*), Hamilton, W. A. (*), Kerne, A. The Team Coordination Game: A zero-fidelity simulation abstracted from fire emergency response practice, *ACM Transactions on Computer-Human Interaction (ToCHI)*, 18 (4) Dec 2011, 37 pages.
2. Kerne, A., Koh, E. (*), Smith, S.M., Choi, H., Webb, A. (*), Dworaczyk, B. (*), combinFormation: Mixed-Initiative Composition of Image and Text Surrogates Promotes Information Discovery, *ACM Transactions on Information Systems*, 27 (1) Dec 2008, 5:1 - 5:45.
3. Kerne, A., Smith, S.M., Koh, E. (*), Graeber, R. (*), An Experimental Method for Measuring the Emergence of New Ideas in Information Discovery, *International Journal of Human Computer Interaction (IJHCI)*, 24 (5) July 2008, 460-477.
4. Kerne, A., Koh, E. (*), Representing Collections as Compositions to Support Distributed Creative Cognition and Situated Creative Learning, *New Review of Hypermedia and Multimedia (NRHM)* Special Issue on Studying the Users of Digital Education Technologies, 13(2) Dec 2007, 135-162.
5. Webb, A. (*), Kerne, A., Koh, E. (*), Human Movement and Clear Affordances Promote Social Interaction, *Leonardo Electronic Almanac (MIT Press)*, 19(5) May 2007.
6. Kerne, A., Doing Interface Ecology: The Practice of Metadisciplinarity, *Intelligent Agent*, 6(1) Jan. 2006, 1-6.
7. Kerne, A., Interface Ecology: An Open Conceptual Space of Collage and Emergence, *ArtLab23*, 1(1) Spring 2002, School of Visual Arts, NYC.
8. Kerne, A., The Conceptual Space of Collage, from CollageMachine to Interface Ecology and Back. *Cultronix*, 5, 2001, Carnegie Mellon University, Pittsburgh.
9. Kerne, A., CollageMachine: An Interactive Agent of Web Recombination, *Leonardo Journal of Arts and Sciences* (Juried Digital Salon Issue), 33(5) Nov 2000, 347-350.
10. Kerne, A., Cultural Representation in Interface Ecosystems Amendments to the interactions Design Awards Criteria. *ACM interactions*, 5(1) Jan 1998, 37-43.
11. Kerne, A. Lang, M., Kofi, F., Cultural Ecology from Ghana to the World Wide Web, *Leonardo Electronic Almanac (MIT Press)*, 4(3) March 1996.

PUBLICATIONS - CONFERENCE – FULL + ARCHIVAL

[acceptance rate %]

12. Moeller, J. (*), Kerne, A., ZeroTouch: An Optical Multi-Touch and Free-Air Interaction Architecture, *Proc CHI 2012*, full paper, “conditionally accepted” [23%].
13. Kerne, A., Hamilton, W. (*), Toups, Z. O. Culturally Based Design: Embodying Trans-Surface Information Exchange in Rummy. *Proc CSCW 2012* [top 9%], full paper, in press.
14. Toups, Z. (*), Kerne, A., Hamilton, W. (*), Shahzad, N. (*), Zero-Fidelity Simulation of Fire Emergency Response: Improving Team Coordination Learning, *Proc CHI 2011*, 1959-1968 [26%].
15. Kerne, A., Qu, Y. (*), Webb, A. (*), Damaraju, S. (*), Lupfer, N. (*), Mathur, A. (*), Meta-Metadata: A Metadata Semantics Language for Collection Representation Applications, *Proc ACM Conf. on Information and Knowledge Management (CIKM) 2010*, 1129-1138 [12.7%].
16. Toups, Z. O. (*), Kerne, A. (*), and Hamilton, W. 2009 (*). Game design principles for engaging cooperative play: core mechanics and interfaces for non-mimetic simulation of fire emergency response. *Proc SIGGRAPH Symposium on Video Games 2009*, 71-78 [30%].
17. Toups, Z. (*), Kerne, A., Hamilton, W. (*), Blevins, A. (*), Emergent Team Coordination: Non-Mimetic Simulation Game Design from Fire Emergency Response Practice, *Proc ACM Group 2009*, 341-350 [36%].
18. Koh, E. (*) and Kerne, A. 2009. Deriving image-text document surrogates to optimize cognition. *Proc ACM DocEng 2009*, 84-93 [29.6%].
19. Karlsen, K., Maiden, N., Kerne, A., Inventing Requirements with Creativity Support Tools, *Proc REFSQ 2009 (International Working Conference on Requirements Engineering: Foundation for Software Quality)*, 162-174 [29%].
20. Webb, A. (*), Kerne, A., The In-Context Slider: A Fluid Interface Component for Visualization and Adjustment of Values while Authoring, *Proc ACM AVI 2008 (Advanced Visual Interfaces)*, 91-99, [27.5%].
21. Toups, Z.O. (*), Kerne, A., Implicit Coordination in Firefighting Practice: Design Implications for Training Fire Emergency Responders, *Proc ACM CHI 2007*, 277-286 [25%].
22. Kerne, A., Koh, E. (*), Smith, S.M., Choi, H., Graeber, R. (*), Webb., A. (*), Promoting Emergence in Information Discovery by Representing Collections with Composition, *Proc ACM Creativity & Cognition 2007*, 117-126 [23%].
23. Koh, E. (*), Kerne, A., Webb, A. (*), Damaraju, S. (*), Sturdivant, D. (*), Generating Views of the Buzz: Browsing Popular Media and Authoring using Mixed-Initiative Composition, *Proc ACM Multimedia 2007*, 228-237 [19%].
24. Koh, E. (*), Caruso, D. (*), Kerne, A., Gutierrez-Osuna, R., Elimination of Junk Document Surrogate Candidates through Pattern Recognition, *Proc ACM Symposium on Document Engineering 2007*, 187-195 [39%].
25. Kerne, A., Koh, E. (*), Dworaczyk, B. (*), Mistrot, J.M. (*), Choi, H., Smith, S.M., Graeber, R. (*), Caruso, D. (*), Webb, A. (*), Hill, R., Albea, J., combinFormation: A Mixed-Initiative System for Representing Collections as Compositions of Image and Text Surrogate343536s, *Proc Joint ACM/IEEE Digital Libraries 2006*, 11-20 [23%].
26. Webb, A. (*), Kerne, A., Koh, E. (*), Joshi, P. (*), Park, Y. (*), Graeber, R. (*), Choreographic Buttons: Promoting Social Interaction through Human Movement and Clear Affordances, *Proc ACM Multimedia 2006*, 451-460 [16%].
27. Koh, E. (*), Kerne, A., "I Keep Collecting": College Students Build and Utilize Collections in Spite of Breakdowns, *Proc European Conference on Digital Libraries 2006*, 303-314 [27%].
28. Kerne, A., Koh, E. (*), Choi, H., Dworaczyk, B. (*), Smith, S.M., Hill, R., Albea, J., Supporting Creative Learning Experience with Compositions of Image and Text Surrogates, *Proc Ed Media 2006*, 2567-2574 [29%].

29. Toups, Z.O. (*), Graeber, R. (*), Kerne, A., Tassinary, L., Berry, S. (*), Overby, K. (*), Johnson, M. (*), A Design for Using Physiological Signals to Affect Team Game Play, *Proc Augmented Cognition International 2006* [70%].
30. Kerne, A., Koh, E. (*), Sundaram, V. (*), Mistrot, J.M. (*), Generative Semantic Clustering in Spatial Hypertext, *Proc ACM Document Engineering 2005*, 84-93 [30%].
31. Aley, E. (*), Cooper, T. (*), Graeber, R. (*), Kerne, A., Overby, K. (*), Toups, Z.O. (*), Censor chair: exploring censorship and social presence through psychophysiological sensing, *Proc. ACM Multimedia 2005*, 922-929 [16%].
32. Kerne, A., doing interface ecology: the practice of metadisciplinarity, *Proc SIGGRAPH 2005 Art and Animation*, 181-185 [20%].
33. Chang, M. (*), Leggett, J.L., Furuta, R., Kerne, A., Williams, J.P., Burns, S.L., Bias, R.G., Collection Understanding, *Proc ACM/IEEE Joint Conference on Digital Libraries 2004*, 334-342 [24%].
34. Kerne, A., Mistrot, J.M. (*), Khandelwal, M. (*), Sundaram, V. (*), Koh, E. (*), Using Composition to Re-Present Personal Collections of Hypersigns, *Proc Computational Semiotics in Games and New Media (CoSIGN) 2004*, 72-81 [17%].
35. Kerne, A. Smith S.M., Mistrot, J.M. (*), Sundaram, V. (*), Khandelwal, M. (*), Wang, J. (*), Mapping Interest and Design to Facilitate Creative Process During Mixed-Initiative Information Composition, *Proc Creativity & Cognition Symposium: Interaction: Systems, Practice and Theory*, 2004, 1-25.
36. Kerne, A., Sundaram, V. (*), A Recombinant Information Space, *Proc Computational Semiotics in Games and New Media (CoSIGN) 2003*, 48-57 [25%].
37. Kerne, A., "Concept-Context-Design: A Creative Model for the Development of Interactivity," *Proc ACM Creativity and Cognition 2002*, 192-199 [48%].
38. Kerne, A., Interface Ecosystem, the Fundamental Unit of Information Age Ecology, " *Proc SIGGRAPH 2002 Art and Animation*, 142-145 [19%].
39. Karadkar, U.P., Kerne, A., Furuta, R., Francisco-Revilla, L., Shipman, F., Wang, J. (*), Connecting Interface Metaphors to Support Creation of Hypermedia Collections, *Proc European Conf Digital Libraries 2003*, 338-349 [29%].

PUBLICATIONS - BOOK

40. Smith, S.M., Kerne, A., Koh, E. (*), Shah, J., The Development and Evaluation of Tools for Creativity, in Markman, A., *Tools for Innovation*, Oxford University Press, 2009.
41. Kerne, A., Koh, E. (*), Choi, H., Webb, A. (*), Dworaczyk, B. (*), Smith, S.M., Hill, R., Albea, J., Supporting Creative Learning Experiences: combinFormation and the Future of Knowledge Creation, in Coste, T., Keller-Mathers, S. (Eds.), *Creativity at Work*, Austin, TX: ACA Press, 2007.

PUBLICATIONS - CONFERENCE – SHORT + ARCHIVED

42. Damaraju, S. (*), Kerne, A., Comparing Multi-Touch Interaction Techniques for Manipulation of an Abstract Parameter Space, *Proc. ACM Multimodal Interfaces (ICMI) 2011*, 221-224 [39%].
43. Qu, Y. (*), Kerne, A., Webb, A.M. (*), Herstein, A. (*), Interoperable Metadata Semantics with Meta-Metadata: A Use Case Integrating Search Engines, *Proc ACM DocEng 2011*, 171-174.
44. Moeller, J. (*), Kerne, A., ZeroTouch: A Zero-Thickness Optical Multi-Touch Force Field, *Proc CHI 2011 Extended (Interactivity)*, 1165-1170 [46%].
45. Moeller, J. (*), Lupfer, N. (*), Hamilton, W. (*), Lin, H. (*), Kerne, A., intangibleCanvas: Free-Air Finger Painting on a

Projected Canvas, *Proc CHI 2011 Extended*, 1615-1620 [43%].

46. Kerne, A., Nack, F., Farulli, L., Interactive Multimedia Computing for Creativity and Expression, *Proc ACM Multimedia 2010*, 1457-1458.
47. Moeller, J. (*), Kerne, A., Scanning FTIR: Unobtrusive Multi-Touch Sensing through Waveguide Transmissivity Imaging, *Proc ACM Tangible, Embedded, and Embodied Interaction (TEI) 2010*, 73-76 [34%].
48. Koh, E. (*), Kerne, A. Test Collection Management and Labeling System. *Proc ACM DocEng 2009*, 39-42 [29.6%].
49. Hamilton, W. (*), Kerne, A., Toups, Z. (*), Qualitative Data Discovery in Group User Studies from Synchronized Communication and Views, *Extended Abstracts of ACM CHI 2009*, 4573-4578.
50. Koh, E. (*), Kerne, A., Moeller, J., Toward Automatic Generation of Image-Text Document Surrogates To Optimize Cognition. *Proc JCDL 2009*, 417-418.
51. Kerne, A., Wakkary, R., Nack, F., del Bimbo, A., Candan, S., Jaimes, A., Steggell, A., Dulic, A., Jennings, P., Connecting Artists and Scientists in Multimedia Research, *Proc ACM Multimedia 2008*, 1113-1114.
52. Kerne, A., Toups, Z. (*), Dworaczyk, B. (*), Khandelwal, M. (*), A Concise XML Binding Framework Facilitates Practical Object-Oriented Document Engineering, *Proc ACM Document Engineering 2008*, 62-65.
53. Koh, E. (*), Kerne, A., Hill, R., Creativity Support: Information Discovery and Exploratory Search, *Proc ACM SIGIR 2007*, 895-896.
54. Kerne, A., Koh, E. (*), Creativity Support: The Mixed-Initiative Composition Space, *Proc ACM/IEEE JCDL 2007*, 509.
55. Graeber, R. (*), Kerne, A., ZooMICSS: A Zoomable Map Image Collection Sensemaking System (The Katrina Rita Context), *Proc ACM Multimedia 2006*, 795-796 [37%].
56. Stenner, J. (*), Kerne, A., Williams, Y., Playas: Homeland Mirage, *Proc. ACM Multimedia 2005*, 1057-1058 [28%].
57. Kerne, A., Smith, S.M., Choi, H., Graeber, R. (*), Caruso, D. (*), Evaluating Navigational Surrogate Formats with Divergent Browsing Tasks, *Proc CHI 2005 Extended*, 1537-1540.
58. Mandic, M. (*), Kerne, A., Using Intimacy, Chronology and Zooming to Visualize Rhythms in Email Experience, *Proc CHI 2005 Extended*, 1617-1620.
59. Kerne, A., Smith, S.M., The Information Discovery Framework, *Proc ACM Designing Interactive Systems 2004*, 357-360 [25%].
60. Khandelwal, M. (*), Kerne, A., Mistrot, J.M. (*), Manipulating History in Generative Hypermedia, *Proc ACM Hypertext 2004*, 139-140 [31%].
61. Azeez, B. (*), Kerne, A., Southern, J. (*), Summerfield, B. (*), Aholu, I. (*), Sharmin, E. (*), Sharing Culture Shock through a Collection of Experiences, *Proc ACM/IEEE Joint Conference on Digital Libraries 2004*, [24%].
62. Kerne, A., Sundaram, V. (*), Wang, J. (*), Khandelwal, M. (*), Mistrot, J.M. (*), Human + Agent: Creating Recombinant Information, *Proc ACM Multimedia 2003*, 454-455 [17%].
63. Kerne, A., CollageMachine: Interest-Driven Browsing Through Streaming Collage," *Proc Cast01, Living in Mixed Reality (Bonn)*, 2001, 241-244 [7%].
64. Kerne, A., Khandelwal, M. (*), Sundaram, V. (*), Publishing Evolving Metadocuments on the Web, *Proc ACM Hypertext 2003*, 104-105 [33%].

65. Kerne, A., Jeremijenko, N., Mateas, M., Schiphorst, T., Wright, W. Extending Interface Practice: An Ecosystems Approach, *Proc SIGGRAPH 2002: Abstracts & Applications*, 90-92 [19%].
66. Kerne, A., Open Processes Create Open Products: Interface Ecology As A Metadisciplinary Base For CollageMachine, *Proc SIGGRAPH01: Abstracts and Applications*, p. 239 [22%].
67. Kerne, A. Interface Ecology as a Pedagogical Framework for HCI, *Proc HCI97/INTERACT*, Nov 1997 [33%].
68. Kerne, A. CollageMachine: Temporality and Indeterminacy in Media Browsing via Interface Ecology, *Proc ACM CHI 1997 Extended*, 238-239 [24%].

PUBLICATIONS - CONFERENCE

69. Toups, Z., Hamilton, W. (*), Kerne, A., Developing Team Interdependence to Engage Team Coordination through Zero-Fidelity Simulation, *Proc ModSim World 2011*.
70. Smith, S. M., Linsey, J., Kerne, A. Using evolved analogies to overcome creative design fixation. *Proc International Conference on Design Creativity (ICDC) 2010*, 35-40 [33%].
71. Kerne, A., Damaraju, S.(*), Kumar, B.(*), and Webb, A.(*), Meta-Metadata: A Semantic Architecture for Multimedia Metadata Definition, Extraction and Presentation, *Poster & Demo Proc. Intl. Conf Semantic and Digital Media Technologies 2008*.
72. Damaraju, S. (*), Kerne, A. Multitouch Gesture Learning and Recognition System, *Extended Abstracts of IEEE Workshop on Tabletops and Interactive Surfaces 2008*.
73. Toups, Z. (*), Kerne, A., Caruso, D. (*), Devoy, E. (*), Graeber, R. (*), Overby, K. (*), Rogue Signals: A location aware game for studying the social effects of information bottlenecks, *Proc Ubicomp 2005 Extended*.
74. Mandic, M. (*), Kerne, A., faMailiar - Intimacy-based Email Visualization, *Proc IEEE InfoVis (Information Visualization) 2004* [23%].
75. Kerne, A., Object Oriented Multimedia Programming in Java, *Proc ICS Intranet 1996*.

PAPERS - WORKSHOP

76. Toups, Z., Hamilton, W. (*), Kerne, A., Mixed Reality Affords Zero-Fidelity Simulation of Team Coordination, in press.
77. Toups, Z. (*), Kerne, A., Hamilton, W. (*), Motivating Play through Score, *Proc. ACM CHI 2009 Engagement by Design*.
78. Toups, Z. (*), Kerne, A., Crafting Experience in a Non-Mimetic Simulation Game for Team Coordination: An Iterative Design Chronicle, NSF Workshop on Media, Arts, Sciences, and Technology 2009.
79. Webb, A. (*), Kerne, A., In-Context Visualization and Authoring of Metadata for Information Collections, NSF Workshop on Media, Arts, Sciences, and Technology 2009.
80. Damaraju, S. (*), Kerne, A., A Gesture Learning and Recognition System for Multitouch Interaction Design, NSF Workshop on Media, Arts, Sciences, and Technology 2009.
81. Koh, E. (*), Kerne, A., combinFormation: Exploring Multiple Searches Together through the Mixed-Initiative Composition Space, *Proc ACM Computer Human Interaction 2007 Workshop on Exploratory Search and HCI*, San Jose, April 2007 [24%].
82. Toups, Z.O. (*), Kerne, A., Location-Aware Augmented Reality Gaming for Emergency Response Education: Concepts and Development, *Proc ACM Computer Human Interaction 2007 Workshop on Mobile Spatial Interaction*.

83. Kerne, A., Compositional Hypermedia, ACM Hypertext 2004, *Spatial Hypertext Workshop*.
84. Kerne, A., combinFormation: Generative Visual Visceral Spatial Hypertext Collections, Shipman, F., Rosenberg, J., ACM Hypertext 2003, *Spatial Hypertext Workshop*.
85. Schiphorst, T., Kerne, A., Kozel, S., Whisper: Wearable Handheld Intimate System for Personal Environmental Response, ACM CHI 2002, *Physiological Computing Workshop*.
86. Kerne, A., The Interface Ecology Research Agenda for HCI, ACM CHI 1999, *Development of an HCI Research Agenda Workshop*.
87. Kerne, A., Emergent Collage Browsing, ACM CHI 1997, *Interactive Systems for Supporting the Emergence of Concepts & Ideas*
- 88.

PUBLICATIONS – OTHER

89. Kerne, A. Lang, M., Djembe Drumming, *Program for the World Music Institute African Troubadours Festival*, 1995.

REVIEWING

ACM CHI Associate Chair	2012 2011 2009 2007
ACM TEI PC	2012 2011
NSF Grants Panel	2011 2010 2009 2009 2008 2007 2005 2005 2004
ACM Multimedia Interactive Art Program Co-Chair	2010 2009 2008
ACM/IEEE JCDL PC	2012 2011 2010 2009 2008
ACM Creativity & Cognition PC	2011 2009 2007
Sketch-Based Interfaces and Modeling (SBIM) PC	2011
ACM DocEng PC	2010 2009
ACM IUI PC	2010
J Visual Com & Image Rep	2010
ACM Tabletop	2010
Intl. WWW Conference PC	2009
NSF Media, Arts, Sciences & Tech Workshop PC	2009
ACM Intl. Multimedia Modeling PC	2009 2008
ACM Multimedia TPC	2008 2007
IEEE Transactions on Multimedia	2008
ACM Transactions on the Web	2008
New Review of Hypermedia and Multimedia	2008 2009
Applied Ontology Journal	2008
ACM CHI	2008 2006 2005 2004
ACM SIGGRAPH Sketches and Posters PC	2007
IEEE Computing	2007

ACM UIST	2007 2002
ACM Multimedia	2006 2005 2004
ACM CSCW	2006
ACM SIGGRAPH, Art Gallery	2006
International Journal of Digital Libraries	2005
ACM DIS	2004
Computational Semiotics in Games and New Media	2004

AWARDS

2000 - 2001	NYU History of the Production of Knowledge Dissertation Fellowship
1999	Milia 2000 new media talent competition, Cannes, France: <i>CollageMachine</i> .
1996	Prix Ars Electronica, Linz, Austria – honorary mention: <i>Coded Messages: CHAINS</i>
1995 - 2000	National Science Foundation Fellowship for Ph.D. research in multimedia at NYU
1991 - 1993	Full tuition scholarship + stipend for M.A. in music at Wesleyan University

RESIDENCIES

June 2008	Dagstuhl Seminar on Contextual and Social Media, Germany
June - July 2002	V2 Lab, Schouwburg Theatre, Rotterdam, The Netherlands
February 2002	Weblab Crossover, Jacksonville, Florida, USA

EXHIBITIONS AND INSTALLATIONS

August 2006	Stenner, J., Kerne, A., Williams, Y., <i>Playas: Homeland Mirage</i> , ISEA / ZeroOne juried by Steve Dietz, et al.
June 2006	Toups, Z., Overby, K., Kerne, A., Graeber, R., Cooper, T., Aley, E., <i>Censor Chair</i> , ACM SIGCHI Intl. Conf on Advances in Computer Entertainment Technology. Juried by Victoria Vesna, et al.
November 2005	Stenner, J., Kerne, A., Williams, Y., <i>Playas: Homeland Mirage</i> , ACM Multimedia Conference Art Exhibition. Juried by Alejandro. Jaimes, Jeffrey Shaw, et al.
May 2005	Kerne, A., and Interface Ecology Lab, <i>combinFormation</i> , International Festival of Electronic Arts, Maribor, Slovenia (invited). Juried by Peter Weibel, et al.
February 2003	Schiphorst, T., Kozel, S., Andersen, K., Mah, S., Jaffe, N., Kerne, A., Lovell, R., <i>Whisper</i> , Dutch Electronic Arts Festival, Rotterdam, The Netherlands.
August 2001	Kerne, A., <i>CollageMachine</i> , SIGGRAPH 2001, Los Angeles Gallery/N-Space.
June 2001	Kerne, A., <i>CollageMachine</i> , in “Brave New Word,” Works and Process,” Guggenheim Museum, New York.
May 2001	Kerne, A., <i>CollageMachine</i> , Electronic Literature Organization Awards, New York.
April - May 2001	Kerne, A., and students of Tufts Comp-150, <i>JumboScope</i> (with <i>CollageMachine</i>), Boston Cyberarts Festival.

April 2001	Kerne, A., <i>CollageMachine</i> , Digital Arts and Culture, Providence.
2000 - 2001	Kerne, A., <i>CollageMachine</i> , New York Digital Salon (NYC, Spain, London, Beijing).
1997	Kerne, A., Lang, M., Kofi, F., <i>Coded Messages: CHAINS</i> , New York Digital Salon.
1995	Perlin, K. et al, Kerne, A., <i>Interacting with Virtual Actors</i> , SIGGRAPH Emerging Technologies.
1995	Perlin, K. et al, Kerne, A. <i>Improvisational Animation</i> , SIGGRAPH Electronic Theater.
1995	Kerne, A., Lang, M., Kofi, F., <i>Coded Messages: CHAINS</i> , Springtij Festival, Amsterdam.

PRESENTATIONS

December 2011	MIT Media Lab, Cambridge, Massachusetts. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
November 2011	Yahoo! Research, Barcelona, Spain. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
November 2011	Universitat Pompeu Fabra, Barcelona, Spain. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
October 2011	Stanford University, Palo Alto, California. <i>Human-Centered Computing for Creativity, Expression, and Participation.</i>
Aug 2010	University of Colorado, Boulder <i>Computing for Creativity and Cooperation.</i>
March 2010	Rutgers University, New York <i>Computing for Creativity and Cooperation.</i>
March 2010	Columbia University, New York <i>Computing for Creativity and Cooperation.</i>
March 2010	NYU Media Research Lab, New York <i>Computing for Creativity and Cooperation.</i>
November 2008	Electronic Arts, Vancouver, Canada <i>Iterative Design of a Creativity Support Tool: combinFormation.</i>
June 2008	ACM Multimedia Program Committee Workshop: Hot Topics in Multimedia Research, Technische Universität Darmstadt - Multimedia Communications Lab , Germany <i>A Mixed-Initiative Information Composition Platform for Supporting Discovery</i>
June 2008	University of Amsterdam, The Netherlands <i>Creative and Expressive Systems.</i>
June 2008	Dagstuhl Seminar on Contextual and Social Media, Germany <i>A Mixed-Initiatives Philosophy for Human Centered Contextual Media Systems</i>
June 2008	University of Florence, Italy <i>Creative and Expressive Systems.</i>
April 2008	University of Illinois Urbana-Champaign (UIUC) <i>Creative and Expressive Systems.</i>
March 2007	Invited Conference Plenary Address: Intersection: A Conversation Between Art and Science on Information Visualization SUNY Oswego, New York, <i>Creative and Expressive Systems.</i>

March 2007	University of Maryland Human Computer Interaction Lab <i>Creative and Expressive Systems.</i>
March 2007	NYU Media Research Lab, New York <i>Creative and Expressive Systems.</i>
December 2006	NSF PIs Meeting: Research and Evaluation on Education in Science and Engineering, <i>Facilitating Information Discovery in Invention Education: Collecting Prior Work through Mixed-Initiative Composition of Image and Text Surrogates</i> (poster).
August 2006	IBM Almaden Research Center, <i>A Mixed-Initiative System for Representing Collections as Compositions of Image and Text Surrogates</i>
May 2005	University of Ljubljana, Slovenia, <i>combinFormation: Mixed-Initiative Composition of Image and Text Surrogates</i>
September 2004	IBM Research Labs, Austin, Texas, <i>Expressive and Personal Interface Ecosystems</i>
March 2004	Texas A&M Cognoscenti (Cognitive Psychology Colloquium), <i>Information as a Stimulus for the Discovery of Remote Associations</i>
April 2002	SUNY (Oswego), USA, <i>Emergent Collage Browsing</i>
April 2002	University of Waikato, New Zealand, <i>Emergent Collage Browsing</i>
March 2002	Interactive Institute, Stockholm, Piteau, Sweden, <i>Conceptual Space of Collage</i>
October 2001	Simon Fraser University (Surrey Campus), Canada, <i>Emergent Collage Browsing</i>
August 2001	Banff Centre New Media Institute (senior artist) Unforgiving Memory and Human Generosity summits: <i>Representations of Relation, Emergent Collage Browsing</i>
August 2001	SIGGRAPH, Los Angeles: <i>Streaming Representations / Emerging Meanings</i> in the “Moving Images” Panel. <i>Dynamic Collage Layout</i> in The Studio.
January 2001	Xerox PARC, Palo Alto, California, <i>CollageMachine</i>
December 2000	ISEA 2000, Paris, France: <i>CollageMachine</i>
April 1997	Performance and Technology Conference (performance studies), Atlanta: <ul style="list-style-type: none"> • <i>Ecologies of the Interface</i> • <i>Providing Content: Ecologies of Creativity and Efficiency</i> Panel
1996	Inroads/Africa Conference, Arts International, <i>Digital Representation: Access to Communications Technology</i> , Panel Facilitator
1994	Pan-African Composers Forum. International Centre for African Music and Dance, University of Ghana: <i>Screaming with Machines: Dead Animals, Live Circuits, Human Voice</i>

PRESENT WORKSHOPS

Kerne, A., Nack, F. *Interactive Multimedia Computing for Creativity and Expression*, ACM Multimedia 2010, Florence.

Kerne, A., *Workshop on Recombinant Information*, Computational Semiotics in Games and New Media (CoSIGN) 2004.

STUDENTS

Ph.D. Advisees

- [1] Jack Stenner, 8/07 Architecture / Visualization (principal advisor; co-advisor is Carol Lafayette), Playas: Homeland Mirage - A Case Study in the Understanding of Critical Reflection in a Digital Media Artwork, Current position: Assistant Professor of Digital Media, University of Florida.
- [2] Eunyee Koh, 8/08, Representing Combined Searches with Image+Text Surrogates extracted from Web Pages, Current position: Research Scientist, Adobe Research Laboratories, San Jose.
- [3] Zachary O. Toups, 8/10, Team Cognition: A Location-Aware Augmented Reality Game Teaches Implicit Coordination Skills to Emergency Responders. Summer 2009: Intern, Yahoo Research, Current position: Research Scientist, TEEEX Disaster Prevention and Response; Assistant Research Professor, Texas A&M Department of Computer Science and Engineering.
- [4] Andrew Webb, 5/13 (expected).
- [5] Sashikanth Damaraju, 5/13 (expected).
- [6] William Hamilton, 5/15 (expected).
- [7] Yin Qu, 5/14 (expected).

Masters Advisees

- [8] Madhur Khandelwal, M.S. Computer Science, 5/04, *Semantics of Time Travel in a Generative Information Space*, Current Position: Senior Software Engineer, TheFind. Previous Position: Software Design Engineer, Microsoft.
- [9] Mirko Mandic, M.S. Computer Science, 12/04, *Visualizing Rhythms of Intimacy in Email Communication*, Current Position: Program Manager, Office User Experience, Microsoft.
- [10] Vikram Sundaram, M.Sc., 12/04, Current Position: Software Design Engineer, Microsoft.
- [11] Andrew Webb, M.S., 8/07, A Transitory Interface Component for In-Context Visualization and Adjustment of a Value.
- [12] Abhinav Mathur, M.S., 12/09, Meta-Metadata: An Information Semantic Language and Software Architecture for Collection Visualization Applications
- [13] Nabeel Shahzad, M.S., 12/11, S.IM.PL *Serialization: Type System Scopes Encapsulate Cross-Language, Multi-Format Information Binding*.
- [14] Jonathan Moeller, M.S., 5/13 (expected).
- [15] Blake Dworaczyk, M.Sc., 5/12 (expected).
- [16] Rhema Linder, M.S., 5/13 (expected).
- [17] Nic Lupfer, M.S., 5/13 (expected).

Research Experiences for Undergraduates

- [18] William Hamilton, 2008-10, TTeCLOg data analysis, game design.
2009 Winner TAMU Computer Science and Engineering Undergraduate Researcher of the year (as a junior),

2010 Winner TAMU Computer Science and Engineering Undergraduate Researcher of the year.
2010 Honorary Mention CRA Outstanding Undergraduate Research Awards.

- [19] Jon Moeller, 2008-10, scanning FTIR multitouch sensor, combinFormation video, IR model, term dictionary, bug fixes, web launch.
- [20] Nic Lupfer, 2009-10, meta-metadata authoring.
- [21] Anthony Fleshner, 2010-, mixed-reality development.
- [22] Sarah Berry, 2006-7, Using Image and Text Surrogates from Automatically Determined Informative Contents of Web Pages to Promote Creativity in the Design Process.
- [23] Megan Schneider, 2007, A Preference Editor Generator through Semantic Translation, Current Position: Staff Software Engineer: System Virtualization, IBM Systems and Technology, Raleigh-Durham.
- [24] David Sturdivant, 2007, Procedurally Forming Combined Image-Text Surrogates to Represent Information, Current position: Software Developer: Courts and Justice Solutions, Tyler Technologies, Dallas.
- [25] Christopher Politz, 2005, Playas: Homeland Mirage
- [26] Ross Graeber, 2004, Representing Location-Based Semantic Information with Constant Information Density, Current Position: Software Engineer, Valtech.
- [27] Jason Jho, 2000-1, CollageMachine / JumboScope installation, Current Position: Software Engineer, Temboo, Inc.
- [28] David Lyons, 2010-.
- [29] Brett Hlavinka, 2010.
- [30] Aaron Herstein, 2010-11.

Other

- [31] J. Michael Mistrot, 2002-4, Viz M.S. student who worked extensively with the Interface Ecology Lab, including as student worker: user interface design. Current Position: CG Supervisor, Electronic Arts.
- [32] Alan Blevins, M.S., Location-Aware Team Games for Emergency Response.

CV → educator

<http://ecologylab.net/courses/>

2008 - **Associate Professor**

2002 - 2008 **Assistant Professor**

Interface Ecology Lab | Center for Study of Digital Libraries

Department of Computer Science

Texas A&M University, College Station, TX

-
- Supervise research for 2 completed Ph.D.s, 3 completed M.S. students with thesis. Currently supervising 6 Ph.D.s + 4 M.S. theses.
 - Advise 10+ undergraduates on courses and careers.
 - Develop new courses. Carry a 1 / 2 teaching load.

CSCE 655 Human-Centered Computing: I developed a new introductory graduate core methods course. I took initiative, first by suggesting the need for a standard introductory HCC methods prerequisite. I worked closely with colleagues to design the scope of the curriculum. Our consensus synthesizes iterative design and evaluation methods, graphical and social interaction, graphics and animation, visual principles, game design, object oriented software engineering, and topics in information and media semantics research. I developed specific readings and assignments. In the first half, students engage in individual programming, design, and user study projects. In the 9-week final project sequence, students work in teams, providing the opportunity to develop a project through an intensive real world design cycle. Stages include two iterations of a proposal, an ethnographic inquiry, storyboards and lightweight prototypes, 2 cycles of user evaluation, a functional prototype, and a conference style research paper. Some projects carry over into ongoing research. Many final projects are interactive games.

[2004, 2005, 2006, 2007, 2008, 2009, 2010]

CSCE 482 Senior Capstone Design in Computer Science: I designed this intensive, the ultimate course in our undergraduate computer science education. I engage students in research-level projects, involving areas such as multi-surface interaction, games, and information. The students begin by writing an NSF-style proposal introduction, with a research plan, as a bid for a topic and a set of resources, such as iPhones and/or an iPad. They develop software, take IRB training, run user studies, produce a polished video, and write a research paper. They learn about how to articulate intellectual merit and broad impact.

[Spring 2010, Fall 2010]

CSCE 667 Advanced Seminar in Human-Centered Computing and Information: Fluid Information

I worked with affiliated faculty to develop a new advanced seminar course offering umbrella. Courses offered under this umbrella combine readings of important research papers with intensive projects. This graduate seminar can be taught with different foci, as long as it addresses different state-of-the-art research topics. Students can repeat it for credit.

I worked with my lead students to develop the first incarnation of the seminar, *Fluid Information*. The more information that is presented to a user, and the more capabilities for operating on it, the more difficult the presentation of an interface that communicates underlying meaning and possibilities for interaction. The limitations are rooted in human cognition: in the working memory, perceptual, and motor systems. *Fluid approaches to interaction use visual and temporal techniques to maximize communication and operational power, while minimizing motor effort and cognitive disruption.* [Spring 2011]

CPSC 444 Structures of Interactive Information is an advanced undergrad course, which explores and connects diverse methods essential to communicating effectively with interactive information. These include programming (CSS, DHTML, JavaScript, XML), visual and interaction design, writing, hypertext theory, and cultural theory. Technological, semantic, cultural, and creative are investigated. Conceptual, visual, and algorithmic methods are invoked. Students develop *navigation*, learning to give users a sense of where they are, where they can go, and what is connected. An extensive course web site serves as a real world example of coding, design, and navigation, as well as a channel of information. Students experience the studio process of sharing work; giving and receiving constructive critique. A permanent gallery, *Must See!*, enables students to learn from each other across years.

Two major projects, the “essaysketch” midterm and the final, focus students’ creative development. In the essaysketch, they must interpret, explain, illustrate, demonstrate, and connect ideas from Vannevar Bush (memex), Ted Nelson (hypertext), Jorge Luis Borges (labyrinth), Marcel Duchamp (found object), Tufte (layering), and Itten (color theory). The final project requires development of a solution to the *large collections problem*: how to present a collection of many information elements in a way that supports users’ understanding of connections between them. Each student must create an ontology and information visualization method for representing a large, personal collection. In most cases, the collection they use consists of the entries in the hypermedia journal that they are required to keep throughout the term. [Spring 2003, 2004; Fall 2004, 2005, 2006]

Perceptive Sensory Systems Lab I directed this teaching laboratory, and have been the PI for \$100,000 of funding from the College of Engineering and Computer Science Department. The mission is to create a space for students to work in courses on ubiquitous and mobile computing projects, combining fields such as human-centered computing, sensors, pattern recognition, information visualization, and multimedia. Two other faculty members participate. The following advanced lab courses utilize this facility, as does HCC.

CPSC 689 Location, Location, Location is an advanced lab course. Power consumption, size, and costs of high performance computers and sensors are dropping. Multi-modal computing goes mobile. Senses of place in physical and virtual worlds are connected in mixed reality systems. We investigate technologies, examine research, and consider social practices and culture. Students engage in building, documenting, and evaluating location-aware interactive systems.

Motivated students benefit from working in a supportive environment that is intellectually, technologically, and scientifically challenging. They learn to conduct all phases of a research project in this field, including conceptualization, problems statement formulation, prior work investigation, algorithm development, interaction design, software engineering, evaluation, and research paper writing. Less experienced students work in collaborative teams with more experienced students. Research leading to publications and theses are produced. [Spring 2008]

CPSC 689 Creative and Expressive Systems is an advanced lab course that that investigates the development and evaluation of interactive and mixed-initiative systems that support and promote human creativity and expression. Evaluation methods are developed, including creative ideation, information discovery, protocol analysis, and flow. The role of cognition in visualization and visual search is studied. Game logics, and their relationships to play and culture, are considered. Social media and interaction. Audio and video production skills for human computer interaction documentation are developed. Students develop and evaluate systems through solo and team projects.

Motivated students benefit from working in a supportive environment that is intellectually, technologically, and scientifically challenging. They learn to conduct all phases of a research project in this field, including conceptualization, problems statement formulation, prior work investigation, algorithm development, interaction design, software engineering, evaluation, and research paper writing. Less experienced students work in collaborative teams with more experienced students. Research leading to publications and theses are produced. [Spring 2007]

CPSC 489/689 Physical Interfaces is an advanced lab course that engages students in development of physical interfaces that integrate computing with human environments. To do this, they must begin with the acquisition and processing of physical signals for multimodal human computer interaction. They develop distributed wireless sensor networks for responsive environments and wearable computers. The characteristics of physiological signals such as electrodermal, respiration, electro-myography, and pulse are studied. Computer vision techniques are examined. Conceptual frameworks include embodied cognition, embodied interaction, ethnography, body-based performance, and psychophysiology. These perspectives enable the design of physical and social spaces that respond to human expression. Advanced students apply pattern recognition principles while developing experiential mappings from physical sensations through sensory signals to visualization and sonification. The process of experience is emphasized. In project teams, undergraduates learn to conduct research by working in collaboration with grad students. [Spring 2006; I am the P.I. on the \$80,000 Perceptive Sensor Networks Lab grant, develops the lab for this course.]

CPSC 689 Recombinant Media Ecosystems is an advanced lab course that explores the theory and practice of *recombinant information*, in which collections are considered and represented not just as set of individual elements, but as composed assemblages that intentionally develop connections among elements. The information age transforms the surrogate of library science into the found object of conceptual art, bringing the representation of meanings into focus. This course develops the medium of digital collections. Students investigate scientific approaches, such as media semantics, metadocuments, and spatial hypertext. They integrate artistic practices for sampling and combining text, image, audio, and video (collage, montage, remix). They also consider and develop methods for evaluating interactive systems for creative experience. Projects develop applications from digital libraries to games to public installations. The course grounds the synthesis of methodologies with the metatheory of interface ecosystems. This is a lab/studio in which students develop creative experiences as research. Students use the Max/MSP realtime signal processing and integration environment. [Fall 2002, Spring 2005]

CPSC 610 Hypertext Created a new version of this graduate course oriented toward readings of the ACM Hypertext Conference. Units include Origins of Hypertext, Notecards, Aquanet, Dexter Model, Spatial Hypertext and Informal Representations, Annotation, Nature of the Link, Back Button, Adaptive Hypermedia, Discourse Structure, Literary Perspectives, and Blogs. Invoked the strategic methodology of practice-based engagement in the context of an existing curriculum. Students took turns making presentations on each unit, using hypertext research software from the A&M Center for Study of Digital Libraries: VKB, Walden's Paths, and combinFormation. This created new connections between educational experiences and active research in our department. It gave the students first-hand working knowledge of the research tools. It also developed feedback on the tools for researchers. Students developed solo and ensemble research projects. [Fall 2003]

2000-2001

Visiting Assistant Professor

Department of Electrical Engineering and Computer Science
Tufts University. Medford, MA

- Carry a 2 - 2 teaching load.
- Develop 1 new course; overhaul 2 other courses from the ground up.
- Human Computer Interaction, a survey course for graduate students. Develop curriculum, which considers state of the art literature in the field. Challenges students to blend disciplines.

Comp 150-PWI | 150-CM Public Web Installation In this course, the students collaborated with me to produce *JumboScope*, a single research project / site-specific art installation, which was exhibited in the Boston Cyberarts Festival. The course was run in a highly participatory fashion. Some students took turns facilitating the entire class. Working groups were self-organizing, and responsible to each other. Scientific, technological, and artistic methodologies were integrated. The conception and flow of site-specific intervention in public spaces. The design of space and interaction. Theory and practice of advanced, distributed, multi-tier web architectures. Political issues of community representation and institutional standards in media curating. The composition of events in time and space. High performance multimedia databases. Server-side programming with Java and Oracle. Browser programming with CSS, HTML and Java/Script. Streaming video. Intelligent agents. Usability evaluation and testing. The marketing of ideas and technology. Consensus process and group decision-making. [Fall 2000, Spring 2001]

Comp 106 Programming for Graphical User Interfaces Overhauled a course that had been previously based on X-11 Motif, with a final project based on office automation, and completely revamped it. I developed a new curriculum, using Java, object-oriented techniques, computer graphics, and multimedia. The students created projects that were games. This related both to current industry developments, and to their interests. Much excitement was generated. [Spring 2001]

Comp 171 Human Computer Interaction is a graduate / upper division undergraduate introductory course. I revamped the course to use primary research source materials, such as Norman's *Everyday Things*, Suchman's *Situated Actions*, and Geertz's *Interpretation of Culture*, in addition to standard HCI texts. [Fall 2001]

1999

Teaching Assistant

Department of Computer Science / Media Research Lab
NYU. New York, NY

- Brought interdisciplinary concepts, such as design and culture, into the multimedia class curriculum. Motivated students to elevate work.
- Developed a “Grader’s corner” segment of class in which the best student work was displayed and critiqued.

1997

Lecturer

MFA Program in Digital Design
Parsons School of Design
New School University. New York, NY

- Developed a curriculum for “Interactive Java Programming”. Supported students with widely varying levels of programming experience and a priori knowledge. Developed web pages to support the curriculum.

1994

Research Associate

International Centre for African Music and Dance
University of Ghana. Legon, Ghana

- Developed “Macintosh for Everyone” workshop for West African researchers. Some had little computer experience. Used local culture and dramatic demos to make the pedagogy accessible.

CV → interactive installation

<http://ecologylab.net/research/>

Playas: Homeland Mirage [2005-]

Playas: Homeland Mirage is an interactive installation that addresses issues of presence, absence, and security. A participant sits at the console and plays a game, in which the goals are to stay alive and explore a simulation of Playas, New Mexico, USA. Other human participants' presence transforms the game image into a mirage, which is projected into the installation environment. Virtual game characters include innocents, terrorists, and Department of Homeland InSecurity (DHI) agents. The piece raises questions about constructed realities. The discourse is represented through the familiar interface of the Torque / Quake II game engine.

- publication [56]. 2 exhibitions:
2006: ISEA / ZeroOne, San Jose,
2005: ACM Multimedia Interactive Art Exhibition, Singapore.



whisper [2001-2003] in collaboration w Schiphorst, T., et al, Simon Fraser University, V2 Lab.

is a participatory public installation based on a network of small wearable devices and intelligent garments. These affectionate computing devices gather and respond to physical data and signals generated by the body. *whisper* rewrites the body as a networked ecosystem of data flows and information.

- Co-develop concepts. Design systems architecture. Design pluggable fashionable device look and feel. Develop wearable, interconnected body state device prototypes.
- 1 exhibition:
2003: Dutch Electronic Arts Festival, Rotterdam.



CollageMachine [1997-2003]

CollageMachine stirred up the process of web browsing with cognitive strategies that promote creativity. The granularity of browsing was changed from documents to samples. Sessions were seeded with sets of web addresses or search queries. CollageMachine deconstructed web pages to form collections of media elements - images and texts - and hyperlinks. It crawled and processed hyperlinks recursively. Media elements streamed concurrently into a collage. Users engaged in collage design, as part of browsing, by arranging elements for which they felt affinity, and removing undesired ones. These direct manipulations drove an agent, which modeled the user's interests in order to affect the evolution of the collage.



- Develop evolution from an artistic concept into a tool into a dissertation into a research project.
- publications: [7] [8] [9] [36] [37] [39] [62] [63] [64] [66] [68]. 1 Ph.D. dissertation (minel).
- 6 exhibitions:
2001: SIGGRAPH, Los Angeles.
2001: Brave New Word, Guggenheim Museum, New York.
2001: Electronic Literature Organization Awards, New York.
2000-2001: New York Digital Salon, New York, Spain, London, Beijing.

2000 - 2001

JumboScope.

Concept, creative direction, technology direction, architecture

Tufts University Dept of Electrical Eng and Computer Science, Medford, MA

Public Ambient Multimedia Interaction, Smart Rooms, Sensors, Agents, Machine Learning, Java, Servlets, Oracle

- Develop concept, and systems architectures for public ambient interactive multimedia installation, featuring *CollageMachine* as a component for presentation / visualization. Includes distributed message passing both across and within tiers.
- Lead development of 3-tier multimedia archive, using Java Servlets & Oracle. Components include a public site for media submissions, a private site for curators, and “seeding” *CollageMachine* from the contents. Data design, object-oriented middle tier API library, and human computer interface.
- Lead development of automated streaming video capture, storage and retrieval system. Integrate with *CollageMachine*.
- Extend *CollageMachine* agent to persistent, server-side repository.
- Lead development of client-side system to gather and utilize smart-room data via sensors and advanced pointing devices.
- Involve, instruct and direct team of 12 students.
- Exhibition:
2001: Boston Cyberarts Festival.



CV → industry

1994-2001

Principal and Director, Creating Media

New York, NY

*Human Computer Interfaces, 3-Tier Internet Architectures, Navigation, Databases, Web Strategy
XML, Java, JavaScript, D/HTML, CSS, SQL, VB, ASP, Perl, Make, CGI, Photoshop, Illustrator, DeBabelizer,...*

- Develop web strategies, architectures, sites, navigation, tools, & infrastructure.
Clients: Modem Media, AT&T, Procter & Gamble, Mitsui, Ru4, Discovery Channel, Darwin Digital.
- Function as Director of Technology and Creative Director.
- Manage a team of six.
- Develop creative strategy for brand identity on web and in print.
- Hire, manage, and collaborate with staff and external vendors.
- Manage customer accounts.
- Develop proposals for new business.
- Develop intellectual property, including trademarks; consideration of patent opportunities.
- Collaborate with lawyers to develop contracts.
- System architecture for *AT&T Personal Solutions*, a database-driven customer care site.
Design of languages & message passing APIs to connect web servers, Oracle, and legacy systems.
- Lead developer of Nimble Intranet Engine and Stem Web site compiler.
Definition of product and 3-tier system architecture. Implementation of front-end interaction, middle tier -- Java Servlets, XML, SQL, and ASP -- and back-end data design and stored procedures.
- Develop interactive game banner ads for Tide and The Discovery Channel.
- Develop first AT&T United Kingdom web site.
- Conception, design, and implementation of Java *Playlets*: an object-oriented interactive multimedia toolkit. *Playlets* stream content. Multiple threads permit concurrent download and interaction. Supported features include animation, hot buttons, and pixel accurate layout w sound. Applet features are scriptable at the HTML level.
Used on Delta AirLines home page.
- Develop a multi-tiered system to manage web site releases and documentation.
- Specification, systems integration, and systems administration for network with T1 connection. Firewall design.
Cisco router configuration. Server runs Informix and MS-SQL Server DBMSs, and Netscape Enterprise and MS IIS Web Servers, and Windows NT Server. Workstations run NT, 95, 3.1 (multi-boot configurations) and MacOS.

1993

Senior Software Engineer, Toshiba America Medical Imaging

South San Francisco, CA

Distributed Architectures, Real-time Systems, Digital Signal Processing, C, Assembler, Unix, VRTX

- Reverse engineer a distributed multi-process / multi-processor MRI system: graphical user interface runs on an SGI workstation and real-time components run in a VME chassis with Motorola 68030 & 68000, 96000 DSP and custom CPU's. The out-of-house real-time system consisted of 500,000 lines of undocumented spaghetti code. Author an in-depth white paper detailing current system architecture, and an alternative, object-oriented, message passing design.
- Create DSP development environment, with interdependent hardware emulators & software from 6 vendors.
- Create new VRTX boot ROMs. Fix bugs and added features to 96000 DSP, 68000 & 68030 code. Create Make files to streamline project support and maintenance.

1990-91	Senior Software Engineer, Litton IA for Boeing Alameda, CA <i>Human Computer Interfaces, Distributed Architectures, Agents, C++, Unix, Sybase, X11</i>
	<ul style="list-style-type: none"> • Lead interface architect and developer for the REDARS (\$40 million) database archive. Boeing assembly and maintenance personnel access the database of commercial airplane schematic images only through this distributed client-server system, which replaces a library of paper documents with 48-hour turnaround time. Each site consists of 40 cooperating agents on 350 heterogeneous workstations. • Develop fast, robust code for ASN-1 unpack, decompression, scaling, and rotation of Tiled Raster Files (TRIF) using the Motif widget set. • Develop C++ base classes and sophisticated templates based on Wcl and Imake to support and standardize development team efforts. • Act as a technical leader, guiding team members, and providing X-Window System expertise for the whole division. • Regular development of high-visibility customer demos. • Rapid development of "proof of concept" demo.
1988-89	Senior Software Engineer for Mars Pathfinder Computer Vision, NASA-JPL Pasadena, CA <i>Distributed Architectures, Digital Video, Real-time Systems, C and Assembler, Unix, VxWorks</i>
	<ul style="list-style-type: none"> • Develop interrupt-driven VxWorks driver to support Datacube video processing boards under MaxWare 3.2 and VxWorks 4.02. • Develop DSP software for real-time video image processing, including filtering, to generate multi-scale Laplacian and Gaussian pyramids. • Develop routines for "on-the-fly" calculation of ROI timing delays for digital video pipelines chaining ROISTORE, MAX-SP, FRAMESTORE, and VFIR-II.
1988	Senior Software Engineer, Wind River Systems. Alameda, CA <i>Real-time Systems, C and Assembler, Unix, Unix Kernel, VxWorks</i>
	<ul style="list-style-type: none"> • Develop SunOS kernel backplane ethernet driver & VxWorks ethernet driver for Sun 3. • Port VxWorks to Motorola MV135 68020 single board computer. • Configure Sun Fileserver and workstations.
1980's	Intern -> Systems Programmer National Institute of Science and Technology <i>C, Assembler, FORTRAN, Unix</i>
	<ul style="list-style-type: none"> • Develop control software & drivers for scientific experiments. Develop operating system, editor.

CV → composer • director • performer • sonification <http://ecologylab.net/sound/>

1995

Sound designer, video editor
NYU Media Research Lab

Digital Audio & Video

- Sound design/sonification for SIGGRAPH 95 *Virtual Actors* installation. Real-time generation of spoken voices and Foley effects using CSound. LPC analysis and resynthesis. Events triggered by animated character behaviors, and the user via video motion tracking, sound peak detection, and voice recognition. Scripts in Perl, M4, and Make to automate development and testing. Multi-processor systems integration with SGI Onyx Reality Engine, Indigo Power Extreme, and Indy.
- KPL programming to integrate with Perlin's Noise-driven Improv system.
- Digital video editing of *Improvisational Animation* video featured in SIGGRAPH 95 Computer Animation Festival, and by Media Research Lab for marketing and demonstrations.
- Research combining acoustics and speech recognition.

1994-5

Coded Messages: CHAINS. <http://ecologylab.net/chains>

Composer / director / librettist / art director / audio engineer

PANAFEST 94. Cape Coast Castle, Legon-Accra, Anyako, Ghana

Intercultural Media, Digital Audio & Video, Human Computer Interface, Navigation, Performance Ecology, Structured Improvisation, Polyrhythmic Frameworks, West African Drum/Dance, Semiotics, Percussive Poetry

- Direct rehearsals of an opera = performance ecosystem featuring 6 Ghanaian drummers and dancers.
- Compose multilingual, intercultural music, movement, percussive poetry, and text sequences.
- Collaborate with master drummer / choreographer Francis Kofi and translator Gustav Hlomatsi to develop an intercultural conceptual framework based on traditional *Eve* drum language texts and ready-made American advertisements.
- Select provocative sites for site-specific performances such as the historic Cape Coast slave trade Castle, and the remote village of Anyako. Develop a ground plan for each site.
- Hire and direct 3-camera video team. Edit digital video. Digital audio post-production.
- Grant from Dance Theatre Workshop Suitcase Fund / Rockefeller Foundation, \$5000.
- 1 award (Prix Ars Electronica Honorary Mention).
- 2 exhibitions.
- publication [11].



1994-95

Research Affiliate, consultant

International Centre for African Music and Dance

University of Ghana, Legon, Ghana

Intercultural Media, Digital Audio, West African Drum/Dance, Databases

- Create interactive multimedia database dictionaries for indigenous languages including *Eve* and *Mandinka*. Collaborate with native language scholars. Printed dictionaries for these languages are not generally accessible.
- Study of *Eve*, *Dagomba*, *Mandinka* and *Susu* drumming and dancing with master artists.
- Create a database of West African performance forms.
- Teach *Macintosh for Everyone* workshops to faculty and other scholars.
- Generate technical reports to enable non-technical management to make development choices.
- Specification, purchasing, installation, integration and testing of computer and audio studios.

4/94

Percussionist. Jali Madi Kanuteh Ensemble

Gambia National Radio. Banjul, The Gambia

West African Drum/Dance, Polyhythmic Frameworks: Traditional Mandinka repertoire.

1991-95

Technology director, sound designer

Creating Media

San Francisco, CA, Middletown, CT, New York, NY

Intercultural Media, Digital Audio, West African Drum/Dance

- Audio post-production of Deep Fieldwork Cross-section CD.
- Design and construct an off-grid mobile recording studio to meet versatility, weight and performance specifications. Custom modular power system includes solar panels, Ni-Cd batteries, smart chargers, and 12 V mini-grid.
- Specification and systems integration of mobile audio and multimedia studio including DAT, Schoeps microphones, phantom powered pre-amp, Mogami cabling, lightweight waterproof flight case, PowerBook, Pyropen, parts..
- Deep Fieldwork production: studio-quality field recordings of a spectrum of West African music traditions, including The Gambia's finest griots, Voodoo Trance drumming in Togo, and the Ashanti royal court drum and horn ensemble.
- Recording sessions' producer: hire and supervises artists and technicians.
- Digital Audio Workstation (DAW) specification, purchasing, integration, & testing.
- Multi-track and field digital recording studio engineering, for projects including *West African Music Traditions for Drumset*, by Abraham Adzenyah and Royal Hartigan, Manhattan Music Publishers.
- Digital Audio editing for CD's and sound tracks.



1993

the economic survival rite of passage.

Composer / director, technology director, sound designer, art director

World Music Hall, Middletown, Connecticut

Intercultural Media, Polyhythmic Frameworks, Digital Audio, Structured Improvisation, Percussive Poetry

- Direct an opera = performance ecology for 8 musicians, 5 danceActors, 5 dancers, and live electronics. Lead a production team of 50. Run rehearsals and production meetings.
- Composer/librettist. Develop music, words, and drama for 8 musicians, 5 danceActors, 5 dancers, and triggered audio samples. Building blocks include polyrhythmic frameworks, structured improvisation, dynamic signals, ensemble transition logics, found sounds, poetry, and narrative.



- New graphical/text scoring techniques, embodied in *script/score*, to represent new media form.
- Technical design for live 24-track digital recording and 3-camera video shoot with radio lavaliers, wireless clearcom, Macintosh-hosted Sample Cell and OMS MIDI, sound reinforcement, and SMPTE distribution.
- Design, field recording, and editing of *concrete* digital audio samples: typewriter, fax, glass breaking, whip crack.
Design and implementation of triggering system for live performance.
- Recording studio engineering of mix downs.
- Editing of video. Post-production lockup of picture & sound with Digidesign ProTools.

12/93

Percussionist / dancer. C.K. Ladzekpo Ensemble

East Bay Center for the Performing Arts. Richmond, CA, USA

West African Drum/Dance, Polyhythmic Frameworks: Traditional Ghanaian repertoire.

1993

Composer / director / librettist, technology director

the economic survival rite of passage

World Music Hall, Middletown, Connecticut

Intercultural Media, Polyhythmic Frameworks, Digital Audio, Structured Improvisation, Percussive Poetry

- Direct a full scale dance theater opera = performance ecology. Lead a production team of 50.
- Compose music; author words, and drama for 8 musicians, 5 danceActors, 5 dancers, and triggered audio samples. Building blocks include polyhythmic frameworks, structured improvisation, dynamic signals, ensemble transition logics, found sounds, poetry, and narrative.
- Design & edit *concrete* digital audio samples: typewriter, fax, glass breaking, whip crack.
Design and implementation of triggering system for live performance.
- New graphical/text scoring techniques, embodied in *script/score*, to represent new media form.
- Collaborate with production manager Melissa Lang, environmental designer Ben Ledbetter, and drummer Royal Hartigan.

5/89

Composer / director / librettist

7/89

Re: wasteland cycle

4/92

Cal Arts, Valencia, California

Martin De Porres, San Francisco, California

with "local memory", "deer dance south of market

World Music Hall, Wesleyan University, Middletown, Connecticut

Polyhythmic Frameworks, Digital Audio, Structured Improvisation, Percussive Poetry, Performance Ecology

- Composer/director/librettist: opera (ecology) for 4 musicians, 5 danceActors, and triggered audio.

8/92

Director / percussionist. Agolona Sabor Afro-Cuban

Martin DePorres, San Francisco.

West African Drum/Dance, Polyhythmic Frameworks: Leader of a traditional Afro-Cuban drum/dance ensemble featuring master artists Judith Justiz and Treviño Leon.

12/91

Percussionist. Pandemonium Steel Orchestra

Avery Fisher Hall, Lincoln Center, New York, New York

West African Drum/Dance, Polyhythmic Frameworks: Traditional and contemporary steel pan repertoire.

7/91

"Barren Threshold"

Marvin Gardens, San Francisco, California

Percussive Poetry, Dance: Solo performance ecology.

7/90	"Occluded Views" Club Kommotion, San Francisco, California
<i>Percussive Poetry</i> : Solo performance.	
7/90	Composer / percussionist. Meryl Jones Ensemble. "Momentum" Eighth Street Studio, Berkeley, California
<i>Structured improvisation</i> : Compose and perform collaborative structured music and dance improvisations in collaboration with choreographer.	
12/90	Composer. "Illegal Entry" Cal Arts, Valencia, California
<i>Digital Audio</i> Tape soundtrack for Olive Whites' performance about strip-tease and violence against women.	
10/88-12/89	Percussionist. Cal Arts African Ensemble Japan America Theatre, Los Angeles + Cal Arts, Valencia, California, et al
<i>West African Drum/Dance, Polyhythmic Frameworks</i> Traditional Ghanaian repertoire. 12/89: Featured as lead drummer.	
10/88-5/89	Percussionist. CalArts Balinese Gamelan Barnsdall Art Park Gallery Theatre, Los Angeles, California Festival of Masks, L.A. County Art Museum Grounds, et al
Traditional Balinese Dance Drama and other repertoire.	
8/88 - 9/88	Composer / poet / percussionist. "Dry Snake Dreams" Maelstrom Bookstore, San Francisco, California, et al
<i>Structured Improvisation</i> : Collaborative integrated media performance fusing poetry, music and movement. All elements of composition and performance based on collective process.	
11/87	Composer / director / performer. "The Deer Dance South of Market", et al The Paradox, San Francisco, California
<i>Polyhythmic Frameworks, Structured Improvisation, Percussive Poetry</i> : Ensemble and solo percussive poetry.	