Michael Paul Neff

Curriculum Vitae (updated Sept. 2009)

APPOINTMENTS….....

- **Assistant Professor** (tenure track), University of California, Davis, 2006- . Cross-appointed to the Department of Computer Science and the Program in Technocultural Studies.

- **Post-Doctoral Fellow**, 2005-6. Max Planck Institut für Informatik (MPII), Saarbrücken, Germany.

ACADEMIC HISTORY.....

- Certified Laban/Bartenieff Movement Analyst (**CLMA**), 2009.

- **Ph.D.**, 2005. Research Area: computer graphics, tools for expressive character animation. Department of Computer Science, University of Toronto, Canada. (Advisor: Eugene Fiume).

- **M.Sc**., 1998. Research Area: computer graphics models for explosions and brittle fracture. Department of Computer Science, University of Toronto, Canada. (Advisor: Eugene Fiume)

- **B. Engineering and Society**, 1996. Completed the five year Computer Engineering and Society program which included a full technical computer engineering program, a set of courses that explored social and environmental impacts of technology and a minor in drama. McMaster University, Hamilton, Ontario. *Summa Cum Laude*

ACADEMIC AWARDS AND HONOURS.....

NSF CAREER Award (2009-2014)
UC Davis Faculty Development Award (2009)
Isadora Duncan Award for Visual Design (2009)
Best Paper Award, Intelligent Virtual Agents (2007)
Alain Fournier Award for the top Canadian Ph.D. dissertation in computer graphics (2005)
Catherall Grant (2004, 2005)
Junior Fellow, Massey College (2001- 2005)
NSERC Graduate Fellowship (PGS-A 1996-1998, PGS-B 1998-2000)
Ontario Graduate Scholarship (declined, 1998)
Valedictorian, Faculties of Engineering, Kinesiology and Social Work, McMaster U.(1996)
Governor General's Canada Scholarship in Environmental Engineering (95-96)
Canada Scholarship 1991-1995
McMaster Chancellor's Entrance Scholarship, 1991

PAPERS.....

Refereed Journal Papers

- Michael Neff, Dawn Sumner, Gerald W. Bawden, Ellen Bromberg, James P. Crutchfield, Della Davidson, Louise H. Kellog and Oliver Kreylos. "Blending Art and Science in the Production *Collapse (suddenly falling down)*", Leonardo. (Extended version of the paper below.) (*To Appear*)

- Michael Neff, Dawn Sumner, Gerald W. Bawden, Ellen Bromberg, Della Davidson, Louise H. Kellog and Oliver Kreylos. "Blending Art and Science to Create *Collapse (suddenly falling down)*", Leonardo Transactions. (*To Appear*)

- Michael Neff, Michael Kipp, Irene Albrecht, Hans-Peter Seidel. "Statistical Reconstruction and Animation of Specific Speakers' Gesturing Styles", ACM Transactions on Graphics, Vol. 27, No. 1, pp. 5:1-24, 2008.

- Michael Kipp, Michael Neff and Irene Albrecht. "An Annotation Scheme for Conversational Gestures: How to economically capture timing and form", Journal on Language Resources and Evaluation - Special Issue on Multimodal Corpora , Vol. 47, No. 3-4, pp. 325-339, 2007.

- Michael Neff, Irene Albrecht and Hans-Peter Seidel. "Layered Performance Animation with Correlation Maps", Computer Graphics Forum 26 (3) (EUROGRAPHICS 07), pp.675-684, 2007.

- Joseph Laszlo, Michael Neff and Karan Singh. "Predictive Feedback for Interactive Control of Physics-based Characters", Computer Graphics Forum 24(3) (EUROGRAPHICS 05), pp. 257-266, 2005.

- Michael Neff and Eugene Fiume. "Methods for Exploring Expressive Stance", Graphical Models, Volume 68, Issue 2, March 2006, pp. 133-157.

Refereed Book Chapters

- Michael Neff and Eugene Fiume. "Chapter 24: From Performance Theory to Character Animation Tools" in Human Motion – Understanding, Modelling, Capture and Animation, Computational Imaging and Vision (36), eds. B. Rosenhahn, R. Klette and D. Metaxas, Springer, pp. 583-612, 2007.

Refereed Conference Papers

- Pengcheng Luo, Michael Kipp, Michael Neff. "Augmenting Gesture Animation with Motion Capture Data to Provide Full-Body Engagement", Proceedings of Intelligent Virtual Agents (IVA'09), 14 pages, 2009.

- Michael Neff and Yejin Kim. "Interactive Editing of Motion Style Using Drives and Correlations", ACM SIGGRAPH/Eurographics Symposium on Computer Animation, 10 pages, 2009.

- Michael Kipp, Michael Neff, Kerstin Kipp and Irene Albrecht "Towards Natural Gesture Synthesis: Evaluating gesture units in a data-driven approach to gesture synthesis", Proceedings of Intelligent Virtual Agents (IVA'07), LNAI 4722, pp. 15-28, 2007. *(Best Paper Award)*

- Michael Neff and Hans-Peter Seidel. "Modeling Relaxed Hand Shape for Character Animation", Articulated Motion and Deformable Objects (AMDO 2006), volume 4069 of LNCS, pp. 262-70, 2006.

- Michael Kipp, Michael Neff and Irene Albrecht. "An Annotation Scheme for Conversational Gestures : How to economically capture timing and form", Proceedings of the Workshop on "Multimodal Corpora" at LREC 2006, pp. 24-27.

- Michael Neff and Eugene Fiume. "AER: Aesthetic Exploration and Refinement for Expressive Character Animation", SIGGRAPH/Eurographics Symposium on Computer Animation 2005.

- Michael Neff and Eugene Fiume. "Methods for Exploring Expressive Stance" ACM SIGGRAPH/Eurographics Symposium on Computer Animation, pp. 49-58, 2004.

- Michael Neff and Eugene Fiume. "Artistically Based Computer Generation of Expressive Motion" AISB Symposium: Speech, Language & Gesture for Expressive Characters, pp. 29-39, 2004.

- Michael Neff and Eugene Fiume. "Aesthetic Edits for Character Animation" ACM SIGGRAPH/Eurographics Symposium on Computer Animation, pp. 239-244, 2003.

- Michael Neff and Eugene Fiume. "Modelling Tension and Relaxation for Computer Animation" ACM SIGGRAPH Symposium on Computer Animation, pp. 81-88, 2002.

- Michael Neff and Eugene Fiume. "A Visual Model for Blast Waves and Fracture" in Proceedings of Graphics Interface '99. pp. 193-202, 1999.

Refereed Posters and Short Contributions

- Michael Neff, "Automatic Torso Engagement for Gesturing Characters", Intelligent Virtual Agents 2008, Lecture Notes in Computer Science, LNCS 5208, pp. 522-23.

- Sageev Oore and Michael Neff, Modeling Ambient Lower Body Motion, ACM SIGGRAPH/Eurographics Symposium on Computer Animation Poster Session, 2004.

Other Publications

- Michael Neff, Michael Kipp, Irene Albrecht, Hans-Peter Seidel. "Gesture Modelling and Animation by Imitation", Technical Report, MPI Informatik, 2006.

- Michael Neff. 2005. "Aesthetic Exploration and Refinement: A Computational Framework for Expressive Character Animation". Ph.D. Thesis. University of Toronto.

- Michael Neff. 1998. "A Visual Model for Blast Waves and Fracture". Master's Thesis. University of Toronto.

INVITED TALKS

- HHMI Interdisciplinary Speaker Series, Grinnell College, "Designing Computational Representations of Movement", April 24, 2009.
- Cognitive Animation 2008, "Modeling and Animating the Gesture Style of Particular Individuals", June 4, 2008.
- Honda Research Inc., "Modeling and Animating the Gesture Style of Particular Individuals", May 9, 2008.
- Stanford University, "Modeling and Animating the Gesture Style of Particular Individuals", March 14, 2008.
- Pixar Animation Studios, "From Performance Theory to Character Animation Tools", Dec. 2006
- University of California, Davis, Computer Science Colloquium, "Gesture Modeling and Animation By Imitation", Oct. 2006.
- INRIA Rhone-Alpes, Grenoble, France, "From Performance Theory to Character Animation Tools", June 2006
- Trinity College, Dublin, Ireland, "From Performance Theory to Character Animation Tools", May 2006
- University of California, Davis, "A Framework for Expressive Character Animation", May 2005

PRESENTATIONS

- SIGGRAPH 08, "Gesture Modeling and Animation Based on a Probabilistic Recreation of Speaker Style". TOG Paper Session. Aug. 2008.
- Epicentre 07, UC DARNET (Digital Art Research Network) Symposium. Jan. 2007
- Dagstuhl Seminar "Human Motion - Understanding, Modeling, Capture and Animation". June 2006

GRANTS

- CAREER: Generative Models for Character Animation & Gesture in the New Age of Art and Electronic Interaction, PI, Sept. 09 to Aug. 14, $581,276.
- Increasing Creative Exploration with Computer Tools That Support Spontaneity & Embodiment, PI, NSF CreativeIT, Oct. 09 to Sept. 12, $245,367.
- Davis Social Links, Co-PI, NSF NeTS, Oct. 08 to Sept. 12, $700,000.
- UC Davis, Small Grant in Aid of Research, PI, July 08 to June 10, $2,000.
- Autodesk, Inc. Software Donation, PI, Jan. 2008, ~$70,000.

GRADUATE STUDENT SUPERVISION.....

- Yejin Kim (2007-), PhD Candidate
- Pencheng Luo (2007-), PhD Candidate
- Tyler Martin (2007-), MSc Candidate
- YingYing Wang (2009-), PhD Candidate

TEACHING.....

Professor for ECS 60: Data Structures and Algorithms. This is a core computer science undergraduate course that introduces students to Abstract Data Types, and related algorithmic analysis, including lists, trees, graphs, hash tables, and sorting. University of California, Davis (Spring 2008)

Professor for TCS 198, TCS 131: Character Animation. An undergraduate course that covers the core principles of character animation and movement analysis, including an introduction to Laban Movement Analysis and applied assignments in Maya. University of California, Davis (Spring 2008, 2009)

Professor for ECS 289: Topics in Character Animation. This graduate seminar in computer science surveys current research on character animation tools. University of California, Davis (Winter 2007, Fall 2007, Spring 2009)

Professor for TCS 198, TCS 130: Introduction to 3D Computer Animation. An undergraduate course that covered the fundamentals of computer graphics and allowed students to obtain practical experience through projects in Maya. University of California, Davis (Spring & Fall 2007, Winter 2009)

Lecturer for CSC 148 Introduction to Computer Science. The main intake course for the computer science program introduces abstract data types, encapsulation, program analysis and object oriented programming with exercises done in Java. University of Toronto. (Summer 2005)

Lecturer for Engineering and Society 3y3: Technology and Culture. This course provides a critical examination of how technology and culture interact. Faculty of Engineering, McMaster University. (Fall 2004)

Lecturer for Engineering and Society 3z3: Preventive Engineering: Environmental Perspectives, a course on how technology can be designed to reduce environmental impacts. Co-taught with Richard Hendriks, Faculty of Engineering, McMaster University. (Spring 2003, 2004 ,2005)

Lecturer for CSC 418/2504 Introduction to Computer Graphics, the senior undergrad/graduate course in computer graphics, Dept. of Computer Science, U. of T. Approximately 100 students and four teaching assistants. (Fall 2002)

Teacher, St. Anne's Girls High School, Kiriari, Kenya. Taught mathematics and computer science to high school students. (Spring 2002)

Teaching Assistant (U of T, except where noted) CSC A02 The How and Why of Computers (2003-4), CSC 300 Computers and Society (1997,99), Inquiry in an Engineering Context I

(McMaster, 1995), CSC468/2204 Operating Systems (1996), CSC 270 Data Structures (twice, 1997), CSC 148 Introduction to Programming (98)

OTHER WORK EXPERIENCE

Computer Development, Software Design for Inago Inc. Performed initial design and implementation work for their NetPeople animated conversational agent (fulltime June-August, 1998; continued as a consultant until Dec. 2001).

Computer Programmer for Marcam Canada (May-August, 1995)
Worked in Marcam's Framework Development division, developing Windows classes.

SERVICE

UC Davis:

- Technocultural Studies Program Committee, 2006-present
- Course development in TCS and Computer Science (four new courses, 2006-2008)
- Computer Science Information Technology Committee, 2006-2008
- College of Engineering Research and Library Committee, 2008-2009
- College of Engineering Student Appeals Committee, 2008-2009
- Computer Science Undergraduate Advisor (and CSUGA committee) (2008-2009)
- Computer Science Undergraduate Affairs Committee (2008-09)

External:

- **Paper reviewer** for:
  SIGGRAPH, Eurographics, Graphics Interface, Symposium for Computer Animation, Journal of Virtual Reality, Computer Graphics Forum, ACM Transactions on Graphics, IEEE Computer Graphics and Applications, VLDB, Computational Intelligence.

- Grant reviewer for NWO, Netherlands.
- **Board of Reviewers,** 8th International Gesture Workshop (GW 2008).
- **Program Committee,** Graphics Interface 2009.
- **Program Committee,** Intelligent Virtual Agents 2008 & 2009.
- **Program Committee,** 2nd Workshop for Human Motion Understanding, Modeling, Capture and Animation, 2007.
- **Advisory Board,** DGPis40 conference. Conference in celebration of the 40th anniversary of the University of Toronto's computer graphics and interaction lab. 2006-8.
- **Engineers without Borders,** National Conference Speaker Coordinator and member of the
- Education Committee, 2003-04.
- **Board of Directors**, Shauri Yako Community Youth Support Centre. 2002- present
  This community-based organization supports the development of street kids, orphans and other impoverished youth living in a slum community in Kenya by providing access to education, food, housing and AIDS education, among other programs.