Chris Martens

Postdoctoral Researcher
Expressive Intelligence Studio
UC Santa Cruz

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EDUCATION

Carnegie Mellon University, 2008 to 2015
Ph.D. in Computer Science
National Science Foundation (NSF) Graduate Research Fellow, 2009-2012

Carnegie Mellon University, 2004 to 2008
Bachelor of Science in Computer Science
Second major in Logic & Computation
School of Computer Science Honors

DISSERTATION

Title: Programming Interactive Worlds with Linear Logic
My thesis develops the relationship between formal methods and game design -- specifically, using linear logic to specify playable worlds. Game mechanics can be expressed at an abstract, but executable, level; and in which those mechanics may be automatically checked for programmer-specified correctness properties.

More information: http://www.cs.cmu.edu/~cmartens/thesis

PUBLICATIONS

Chris Martens. "Toward Computational Support for Experimental Theater." To appear in the proceedings of the DiGRA and FDG First Joint International Conference, August 2016.

Chris Martens and Rogelio E. Cardona-Rivera. "Discourse-driven Comic Generation." To appear in the proceedings of the International Conference on Computational Creativity, July 2016.

Chris Martens. "Ceptre: A Language for Modeling Generative, Interactive Systems." Proceedings of Artificial Intelligence for Interactive Digital Entertainment, November 2015 (28% acceptance rate).

Nominated for Best Paper.
http://www.cs.cmu.edu/~cmartens/ceptre.pdf

Chris Martens, Joao F. Ferreira, Anne-Gwenn Bosser, and Marc Cavazza. "Generative Story Worlds as Linear Logic Programs." Proceedings of Intelligent Narrative Technologies 7, June 2014. http://www.cs.cmu.edu/~cmartens/int7.pdf

Chris Martens, Anne-Gwenn Bosser, Joao F. Ferreira, and Marc Cavazza. "Linear Logic Programming for Narrative Generation." Proceedings of Logic Programming and Nonmonotonic Reasoning, September 2013.
http://www.cs.cmu.edu/~cmartens/lpnmr13-short.pdf

Chris Martens and Karl Crary. "LF in LF: Mechanizing the Metatheories of LF in Twelf." Logical Frameworks and Metalanguages: Theory and Practice, September 2012.
http://www.cs.cmu.edu/~cmartens/lfinlf.pdf

Charles Cusack, **Chris Martens**, and Priyanshu Mutreja. "Volunteer Computing Using Casual Games." In proceedings of *Future Play International Conference on the Future of Game Design and Technology*, 2006.
http://www.cs.cmu.edu/~cmartens/volunteer-computing.pdf

Ulas Bardak, Eugene Fink, **Chris R Martens**, and Jamie Carbonell. "Scheduling with Uncertain Resources Part 3: Elicitation of Additional Data." In *Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics*, 2006.
http://www.cs.cmu.edu/~cmartens/schedule-elicit.pdf

INVITED TALKS
All talk slides available at: https://speakerdeck.com/chrisamaphone/

"Operationalizing Creative Theories." Keynote for OBT (Off the Beaten Track) Workshop, co-located with the Principles of Programming Languages (POPL) conference, January 2016.

"Proofs as Stories." University of Connecticut Logic Group Seminar, October 2015.

"Ceptre: A Language for Modeling Interactive Worlds." FPW (Future Programming Workshop), co-located with Strange Loop 2015.

TALKS
All talk slides available at: https://speakerdeck.com/chrisamaphone/

"Generative Story Worlds as Linear Logic Programs." INT 2014.
http://www.cs.cmu.edu/~cmartens/int-talk.pdf

"Systems of Play as Linear Logic Programs." NJPLS May 2014.
http://www.cs.cmu.edu/~cmartens/njpls-may2014

"Languages for Computational Creativity." OBT 2014.
http://www.cs.cmu.edu/~cmartens/obt2014/obt.html

"Linear Logic Programming." Strange Loop 2013.
http://www.flickr.com/photos/8243148@N08/sets/72157635668011986/

"Rule-based Interactive Fiction." OBT 2012.
http://www.cs.cmu.edu/~cmartens/obt-talk.pdf

"LF in LF: Mechanizing the Metatheories of LF in Twelf." LFMTP 2012.
http://www.cs.cmu.edu/~cmartens/lfinlf-talk.pdf

WORK EXPERIENCE

UC Santa Cruz, December 2016 – present. Santa Cruz, CA.
Postdoctoral researcher. Worked with Michael Mateas, Noah Wardrip-Fruin, and Arnav Jhala, along with several graduate students, in the Expressive Intelligence Studio.

INRIA Parsifal, Summer 2011. Paris, France.
Research Intern. Worked with Dale Miller and Kaustuv Chaudhuri on the Abella logical framework.

Google, Inc., Summer 2010. New York, NY.
Software Engineering Intern. Worked with a small team on the type system for a server configuration language.

TEACHING

Interactive Fiction (98–228) Spring 2014.
Designed and taught this course independently through the StuCo (student courses) program at CMU.
Course website: http://www.cs.cmu.edu/~cmartens/if-stuco/index.html

Parallel and Sequential Data Structures and Algorithms (15–210), Fall 2011.
Teaching Assistant for the first iteration of the course. Work included course design and assignment implementation.
Course website: http://www.cs.cmu.edu/~15210

Constructive Logic (15–317), Fall 2010.
Teaching Assistant. Developed and graded assignments; developed and led recitations.
Course website: http://www.andrew.cmu.edu/course/15-317/

Various CMU undergraduate courses, 2005 – 2008.
Undergraduate Teaching Assistant. Course topics include functional programming, logic, and discrete mathematics.

MISCELLANEOUS WRITING

Everything in Context. Research blog.
http://lambdamaphone.blogspot.com/

"Teaching Experimental Interactive Fiction." Published on Storycade.
http://storycade.com/teaching-experimental-interactive-fiction/

SELECTED INTERACTIVE NARRATIVE WORKS

Chris Martens and Rob Simmons. *Quiescent Theater*. Twine game generator submitted to PROCJAM 2014. http://play.typesafety.net/

Vincent Zeng and **Chris Martens**. *Origins*. Hypertext piece submitted to IFComp 2014.
http://www.cs.cmu.edu/~cmartens/if/synchro/

Chris Martens. *QWOP Training Run*. An autobiographical branching/converging narrative experiment disguised as a running simulator.
https://drive.google.com/drive/#folders/0B1HJXoh3BOUbU21LcWZiWGVyZ0E

Chris Martens. Transfer Points. A hypertext game about navigating the subway. Submitted to RUINJAM 2014.
http://commondatastorage.googleapis.com/itchio/html/20606/transfer-points/transfer-points.html

Chris Martens. *Spoken*. A spoken-word (audio) based interactive fiction piece. Featured on the game curation blog Forest Ambassador.
https://dl.dropboxusercontent.com/u/7495451/twines/spoken/spoke.html

SERVICE

Program co-chair, ICIDS 2016.
Track co-chair for Intelligent Narrative Technologies.

Program committee member, TFP 2016.

Programming Languages Mentoring Workshop @ SPLASH 2015
Graduate Student Panelist

Served on a panel of three graduate students to answer questions from undergraduate students considering pursuing a Ph.D. in programming languages.

Intel International Science and Engineering Fair (ISEF) 2015
Volunteer Judge for Oracle Academy
Interviewed and evaluated pre-college contestants in the renowned international science fair, working with a committee to select nine prize winners.

Unconscious Bias @ CMU Advisory Board, 2015
Worked with a team of CMU and Google community members to develop a program for addressing unconscious bias in hiring and application decisions.

Computer Science Department Graduate Admissions Committee Member, 2013–2015
Read, discussed, and reviewed applications to CMU's Ph.D. program in Computer Science. Completed two years of service.

POPL Artifact Evaluation Committee, October 2014.
Reviewed artifacts (programs, language implementations, and mechanized proofs) submitted by POPL authors of accepted papers.

Grace Hopper Celebration Student Opportunity Lab
Session Host, October 2014.
Gave a short introduction and Q&A to Grace Hopper attendees about opportunities in programming languages research. Provided a handout summarizing topics and resources to pursue further interest.

Co-advisor, CMU Senior Thesis Project, 2013–2014
Met weekly with an undergraduate student to co-advise a senior thesis project on using epistemic modal logic to specify cryptographic protocols.

External reviewer: CATS 2013, LINEARITY 2014, PPDP 2014.

Twelf Tutorials at POPL 2010 and CADE 2013
Helped prepare and teach a tutorial on using Twelf to the POPL and CADE conference audiences.

Creative TechNights Volunteer, 2010–2011
http://women.cs.cmu.edu/technights/
Helped run sessions teaching middle school-aged girls to write games in the Inform 7 programming language.

Concert Reading Group Convener, 2010–2011

Ran a student-based logic and programming languages reading group.

EXTRACURRICULAR

Editor, Method & Apparatus, 2014.
Published a collaborative digital zine on the use of free, accessible digital creativity tools. More information at http://methodandapparat.us/ .

Cartooning, 2004 – present.
Comic travelogues, fiction, and sketchnotes for conference talks. Available at
http://www.cs.cmu.edu/~cmartens/comics/

Distance running, 2010 – present
Raced in the Pittsburgh Marathon three times. Personal record of 4 hours, 8 minutes.

SIGBOVIK Organizing Committee Member 2009–2011
Served in various positions, including Chair, on the organizing committee of a satirical computer science conference at CMU in honor of the illustrious fictional character Harry Q. Bovik.
http://sigbovik.org/