## Emma Tosch

CONTACT Information 231 Elm Street 2R Northampton, MA 01060 etosch@gmail.com 140 Governors Drive Amherst, MA 01002 etosch@cs.umass.edu http://github.com/etosch http://blogs.umass.edu/etosch Advisor: Emery Berger

**EDUCATION** 

Ph.D. Computer Science. University of Massachusetts, Amherst. Amherst, MA. 2011 – present. M.S. Computer Science. University of Massachusetts Amherst. Amherst, MA. 2011 – 2015. M.A. Computer Science. Brandeis University. Waltham, MA. 2009 – 2011. B.A. English Literature. Wellesley College. Wellesley, MA. 2006 – 2008.

RESEARCH EXPERIENCE Research Assistant. June 2013 – present. University of Massachusetts, Amherst. PLASMA Lab, Advisor: Emery Berger. Developing a domain specific programming language and runtime system to design, debug, and deploy scientific surveys on the web, at scale.

Research Intern. June 2015 – August 2015. Facebook, Inc. Menlo Park, CA. Core Data Science – Economic Research Team, Statistics and Decision Science Team. Mentor: Eytan Bakshy. Static Analysis for the PlanOut DSL.

Research Assistant. September 2011 – January 2013. University of Massachusetts, Amherst. CI Lab, Advisor: Lee Spector. Researched new metrics for evaluating parameters of evolutionary search based on techniques from nonparametric statistics.

**Visiting Researcher**. June 2010 – August 2010. Institute for Creative Technologies. Playa Vista, CA. Supervisor: Ron Artstein. Augmented and evaluated a natural language generation and question-answering system for virtual humans.

**PUBLICATIONS** 

- E. Bakshy, E. Tosch. Formal Verification and Automated Causal Inference for Internet-Scale Experiments. CODE@MIT 2015.
- E. Tosch, E. Berger. SurveyMan: Programming and Debugging Surveys at Scale. *Proceedings of the 2014 ACM International Conference on Object Oriented Programming Systems Languages and Applications*. ACM New York, NY, USA. 2014. **Best Paper Award.**
- E. Tosch, E. Berger. Programming and Debugging Surveys. POPL OBT 2014.
- E. Tosch, L. Spector. Achieving COSMOS: A metric for determining when to give up and when to reach for the stars. *Proceedings of the 14th Intl. Conf. on Genetic and Evolutionary Computation Conference Companion*. ACM, 2012.
- K. Harrington, E. Tosch, L. Spector, J. Pollack. Compositional Autoconstructive Dynamics *Proc.* of the 8th Intl. Conf. on Complex Systems. 2011.
- G. Chen, E. Tosch, R. Artstein, A. Leuski, D. Traum. Evaluating Conversational Characters Created through Question Generation. FLAIRS Conference. 2011.

# Talks and

Programming Languages and Experimentation.

PRESENTATIONS 17 October 2015. CODE@MIT. Poster Presentation. Cambridge, MA.

Programming and Debugging Surveys.

- 1 October 2015. Union College. Invited Talk. Schenectady, NY.
- 13 May 2015. Google, Inc. Invited Talk. Cambridge, MA.
- 9 April 2015. Center for Data Science launch symposium. Poster presentation. Amherst, MA.
- 22 October 2014. OOPSLA 2014. Oral Presentation (full). Portland, OR.
- 11 June 2014. PLDI Student Research Competition. Poster presentation & short talk. Edinburgh, Scotland.
- 11 April 2014. CRA-W Graduate Cohort Workshop. Poster presentation. Santa Clara, CA.
- 12 March 2014. UMass CS Women. Oral presentation. Amherst, MA.
- 31 January 2014. Google PhD Summit. Lightning talk. Cambridge, MA.
- 25 January 2014. POPL OBT Workshop. Oral presentation (full). San Diego, CA.

#### Achieving COSMOS.

7 July 2012. GECCO UP Workshop. Oral presentation (full). Philadelphia, PA.

#### Women in Computing.

24 April 2015. MassMutual Women in Technology Conference. Inspiring Women in Technology Panelist.

#### TEACHING EXPERIENCE

**Mentor**. Google Summer of Code. Official mentor for a GSoC student (Prakhar Srivastav) working on a SurveyMan graphical interface. Summer 2015.

**Mentor**. UMass Amherst. Mentoring an undergraduate (Molly McMahon) for an independent study with Emery Berger. Spring 2014.

**Teaching Assistant**. Reasoning Under Uncertainty (Undergraduate), University of Massachusetts, Amherst. Prof. Andrew McGregor. Spring 2013.

**Teaching Assistant, Guest Lecturer**. Intro. to Theory of Computation (Undergraduate), Brandeis University. Antonella DiLillo. Spring 2011.

**Teaching Assistant**. Structure and Interpretation of Computer Programs (Undergraduate), Brandeis University. Prof. Harry Mairson. Fall 2010.

**Teaching Assistant**. Data Structures (Undergraduate), Brandeis University. Antonella DiLillo. Spring 2010.

**Volunteer**. Cahners Computer Place, Museum of Science, Boston. Oct. 2009 – May 2010, Sep. 2010 – May 2011

## ${\rm Teaching}$

28 September 2015. Active Learning Training with Rachel Rybaczuk.

Training

Fall 2015. CIRTL Course. Diversity in College Classroom: Teaching the STEM Undergraduate.

### Relevant Work

Software Engineering Intern. Sept. 2014 – Dec. 2014. Google, Inc. San Bruno, CA.

Data Warehouse Analyst. March 2008 – May 2009. Recombinant Data Corp. Newton

WORK Experience Data Warehouse Analyst. March 2008 – May 2009. Recombinant Data Corp. Newton, MA. Assistant Loan Processor. June 2005 – October 2006. Hoffman Companies. Brookline, MA. Intern. June 2004 – August 2004. New Jersey Division of Law and Public Service. Trenton, NJ.

PROFESSIONAL CS Women UMass. Co-Chair. Jan. 2015-present.
ACTIVITIES PLDI External Review Committee. Member. 2016.
& ECOOP External Review Committee. Member. 2016.

SERVICE POPL OBT Workshop Program Committee. Member. 2016.

WPI STEM Faculty Launch. Participant. September 2015.

ACM-W Early Career Mentoring Workshop. Participant. June 2015.

PLDI Student Volunteers. Co-Captain. June 2015.

ECOOP DSLDI Workshop Program Committee. Member. 2015.

PLDI Artifact Evaluation Committee. Member. 2015. POPL Artifact Evaluation Committee. Member. 2015. NCWIT Aspirations Scholarship. Reviewer. 2014. OOPSLA Student Volunteers. Volunteer. 2014.

ACM-W Graduate Cohort Workshop. Participant. 2014.

Graduate Employee Organization, UAW 2322. Steward. September 2011–May 2014.

Oregon Programming Languages Summer School. Participant. Summer 2013.

Brandeis University Women in Computing (for Undergraduates). Founder. April 2010 - May 2011.

HONORS, 2015 WPI STEM Faculty Launch travel grant.

SCHOLARSHIPS, 2015 NCWIT Symantec Student Seed Funding (for UMass CS Women).

AND AWARDS 2015 UMass Amherst School of Computer Science Outstanding Synthesis Award.

2014 OOPSLA Best Paper Award.

2014 PLDI ACM Student Research Competition (1st Place).

2013 Future of Software Engineering Symposium Scholarship at Microsoft Research.

2013 Programming Languages Mentoring Workshop Scholarship. 2012 ACM-W conference scholarship (attended SIG-EVO).

2010 Grace Hopper Celebration of Women in Computing Scholarship.

2005 Humanities Foundation Award in English Literature.