

# Todd D. Mytkowicz

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## CONTACT INFORMATION

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## EDUCATION

### **University of Colorado**

*Ph.D Candidate, Computer Science*

Advisor: Prof. Amer Diwan

Co-advisor: Prof. Elizabeth Bradley

Title: *Supporting Empirical Inquiry in Computer Systems Research*

Boulder, Colorado  
**Jan 2005 - Dec 2009**

### **Syracuse University**

*B.S., Computer Science*

Syracuse, New York  
**Aug 1997 - May 2001**

## EXPERIENCE

### **University of Colorado,**

*Research Assistant*

Research in computer systems follows the trend of innovate (e.g. invent a new whiz bang garbage collector) and then evaluate (e.g. does it significantly speed up our programs). Paramount to progress in our domain are tools that allow a researcher to *measure* high fidelity information about their system without perturbing its behavior and methodologies that allow researchers to accurately *evaluate* the impact of their inventions. My research focuses on understanding the complex behavior of computer systems and building tools to aid programmers in measuring and evaluating their systems.

Boulder, Colorado  
**Jan, 2005 - present**

### **University of Lugano,**

*Visiting Researcher*

Funded by a ThinkSwiss Research Fellowship and sponsored by Prof. Matthias Hauswirth in order to continue my Ph.D research.

Lugano, Switzerland  
**Oct 2007 - Jan 2008**

### **IBM T.J. Watson Research Center,**

*Research Intern*

Mentored by Peter. F. Sweeney in the High Productivity Tools research group. A result of this internship was our ASPLOS'09 paper.

Hawthorne, New York  
**June 2007 - Sept 2007**

### **Palo Alto Research Center (PARC),**

*Research Intern*

Mentored by Dr. Ed Chi in the Augmented Social Cognition lab. Our research studied the performance of online social systems (wikipedia and del.icio.us). A result of our collaboration was one conference paper and two workshop papers.

Palo Alto, California  
**June 2006 - Sept 2006**

### **IBM Extreme Blue,**

*Intern*

My summer work used statistical models of performance to organize hardware infrastructure in an IBM hosted environment. We produced four patent disclosures with one coming to fruition in 2007.

Research Triangle Park, North Carolina  
**June 2005 - Sept 2005**

### **Colorado State University,**

*Teaching Assistant*

TA for Artificial Intelligence (CS 440) as well as a graduate level Machine Learning (CS 545) course. Responsibilities include grading, office hours and answering course-work / homework questions.

Fort Collins, Colorado  
**August 2004 - December 2004**

**Bitpipe Communications,***Lead Architect*

Boston, Massachusetts

**May 2001 - December 2004**

Software Architect for startup that sold for 40 million in 2004. Bitpipe was the leading provider of on-line sales-lead generation programs for enterprise technology companies. My role was to develop new systems for sales-lead generation.

## SERVICE

External Reviews / Co-reviews for: CHAOS, ANCS and PLDI

## PUBLICATIONS

*Journal Papers*

Amer Diwan, **Todd Mytkowicz**, Peter F. Sweeney and Matthias Hauswirth. *Trace Analyzer: A system for processing traces*. Software Practice and Experience, 2009 - Under Review.

**Todd Mytkowicz**, Amer Diwan, and Elizabeth Bradley. *Computer systems are dynamical systems*. CHAOS, 2009.

*Refereed conference papers*

**Todd Mytkowicz**, Devin Coughlin and Amer Diwan. *Inferred Call Path Profiling* International Conference on Object Oriented Programming, Systems, Languages and Applications (OOPSLA), 2009.

**Todd Mytkowicz**, Amer Diwan, Peter F. Sweeney, and Mathias Hauswirth. *Producing wrong data without doing anything obviously wrong!* ACM Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2009.

Dan Knights, **Todd Mytkowicz**, Peter F. Sweeney, Michael C. Mozer and Amer Diwan. *Blind Optimization for Exploiting Hardware Features*. ETAPS Compiler Construction (CC), 2009.

Ed Chi and **Todd Mytkowicz**. *Understanding the efficiency of social tagging systems using information theory*. ACM Conference on Hypertext and Hypermedia (Hypertext), 2008.

Ed H. Chi, Peter Pirolli, Bongwon Suh, Aniket Kittur, Bryan Pendleton, and **Todd Mytkowicz** *Augmented Social Cognition* In Proceedings of AAAI Spring Symposium on Social Information Processing. AAAI Press, 2008.

**Todd Mytkowicz**, Peter F. Sweeney, Matthias Hauswirth, and Amer Diwan. *Time interpolation: So many metrics, so few registers*. IEEE/ACM International Symposium on Microarchitecture (MICRO), 2007.

Marc D. Richards, L. Darrell Whitley, J. Ross Beveridge, **Todd Mytkowicz**, Duong Nguyen, and David Rome. *Evolving cooperative strategies for uav teams*. Genetic and Evolutionary Computation Conference (GECCO), 2005.

*Extended Abstracts and Talks*

**Todd Mytkowicz**, Amer Diwan, and Elizabeth Bradley. *Chaos in computer performance*. 16th US National Congress of Theoretical and Applied Mechanics, 2010.

**Todd Mytkowicz**, Amer Diwan, and Elizabeth Bradley. *Computer systems are dynamical systems*. SIAM Conference on Applications of Dynamical Systems, 2009.

Ed Chi, Aniket Kittur, **Todd Mytkowicz**, Brian Pendleton, and Bongwon Suh. *Augmented Social*

*Cognition: Understanding Social Foraging and Social Sensemaking.* Human Computer Interaction Consortium (HCIC), 2007.

Michael Mozer, Michael Colagrosso, David Huber, **Todd Mytkowicz**, and Rich Zemel. *How Practice Makes Perfect.* Invited Talk: International Conference on Cognitive Modeling (ICCM), 2004.

Workshop papers

Ed H. Chi and **Todd Mytkowicz**. *Understanding the Efficiency of Social Tagging Systems using Information Theory.* International Conference on Weblogs and Social Media (ICWSM), 2008.

**Todd Mytkowicz**, Amer Diwan, Matthias Hauswirth, and Peter F. Sweeney. *We have it easy, but do we have it right?* NSF Next Generation Systems Workshop at IPDPS (NGS), 2008

**Todd Mytkowicz**, Amer Diwan, Matthias Hauswirth, and Peter F. Sweeney. *Understanding Measurement Perturbation in Trace-Based Data.* NSF Next Generation Systems Workshop at IPDPS (NGS), 2007

Aniket Kittur, Ed H. Chi, Bryan A. Pendleton, Bongwon Suh, **Todd Mytkowicz**. *Power of the Few vs. Wisdom of the Crowd: Wikipedia and the Rise of the Bourgeoisie.* alt.CHI at ACM SIGCHI Conference, 2007

**Todd Mytkowicz**, Amer Diwan, Matthias Hauswirth, and Peter F. Sweeney. *Aligning traces for performance evaluation.* NSF Next Generation Systems Workshop at IPDPS (NGS), 2006

PATENTS

- Electronic Document Tracing—2003
- System, Method and program for selectively rebooting computers and other components of a distributed computer system—2007

HONORS AND AWARDS

- SIGPLAN Travel Award 2009: PLDI (\$900) and OOPSLA (\$500)
- Departmental Travel Award for ASPLOS 2009 (\$500)
- ThinkSwiss Research Fellowship 2008 (\$2500)
- HCIC Student Representative (U. Colorado) 2006 and 2007 (PARC)