Phillip Mates — Curriculum Vitae

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Research interests

Compiler verification, type systems, and static analysis

Education

Northeastern University, Boston, MA — *2012 –*
PhD in Computer Science, *ongoing*
Advisor: Amal Ahmed

University of Utah, Salt Lake City, UT — *2008 – 2011*
BS with honors in Computer Science, *December 2011*

Internships & Training

PhD summer schools

- Oregon Programming Languages Summer School — *2012*
- Institut Henri Poincaré thematic trimester: Semantics of proofs and certified mathematics — *2014*

Publications

A Provenance-Based Infrastructure to Support the Life Cycle of Executable Papers *ICCS 2011*
D. Koop, E. Santos, P. Mates, H. Vo, P. Bonnet, B. Bauer, B. Surer, M. Troyer, D. Williams, J. Tohline, J. Freire and C. Silva.
International Conference on Computational Science

CrowdLabs: Social Analysis and Visualization for the Sciences *SSDBM 2011*
P. Mates, E. Santos, J. Freire and C. Silva
International Conference on Scientific and Statistical Database Management

The ALPS project release 2.0: Open source software for strongly correlated systems *JSTAT 2011*
B. Bauer et al. (ALPS collaboration).
Journal of Statistical Mechanics: Theory and Experiment

Towards Supporting Collaborative Data Analysis and Visualization in a Coastal Margin Observatory *CSCW 2010*
E. Santos, P. Mates, E. Anderson, B. Grimm, J. Freire and C. Silva
Workshop on The Changing Dynamics of Scientific Collaboration

Programming & Research experience

Research Assistant, University of Utah, UT — *Summer 2012*
Built a static analyzer capable of statically verifying permission usage of Android applications. The analyzer targeted Dalvik byte-code and supported higher-order control flow.
Mentor: Matthew Might

Software Engineer, Space Monkey, UT — *Summer 2012*
Developed device monitoring software in Node.js during a brief period between my undergraduate and graduate studies.

Software Engineer Intern, Google Santa Monica, CA — *2011*
Built a domain name classifier to enforce policy violations and developed internal analytics scripts.
Mentor: Joe Vanderwaart

Visiting Research Student, Institute for Theoretical Physics, ETH Zürich — *2010*
Worked with Computational Physicists to create useful data management tools. Surveyed the field of Randomness Extractors and explored possible implementation designs for use in Monte Carlo simulations.
Mentor: Matthias Troyer

Research Undergrad, Scientific Computing and Imaging Institute, UT — *2009 – 2010*
Lead developer of an online visualization repository which leveraged the VisTrails system to foster collaboration and enable scientists to easily present and share their visualizations. Developer for the VisTrails open-source provenance and workflow management system.
Mentor: Claudio Silva

Talks

Kripke Logical Relation for Affine Functions:
The Story of a Free Theorem in the Presence of Non-termination — *Sept. 2013*
The 2nd ACM SIGPLAN Workshop on Higher-Order Programming with Effects, Boston, MA

Posters

Analyzing Android Applications with Abstract Interpretation — *ICFP 2012*
Student Research Competition

Teaching experience

Teaching assistant, CS2500 *Introduction to Programming and Computing* — *2012,2014*
Introductory undergraduate CS course at Northeastern University modeled off of "How to Design Programs".

Technical Skills

Proficient: Python
Familiar: Coq, Haskell, Racket, plus the usual suite of OO languages

References

Upon request.