Benno Stein

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Department of Computer Science
University of Colorado Boulder
Boulder, CO, 80309

EDUCATION

University of Colorado, Boulder
Doctor of Philosophy, Computer Science — 2017 to Present
Advisor: Bor-Yuh Evan Chang

University of Colorado, Boulder
Master of Science, Computer Science — 2015 to 2017

Williams College, Williamstown, MA
Bachelor of Arts, Computer Science and Mathematics — 2011-2015

Rye High School, Rye, NY
National Merit Scholar, National AP Scholar, National Honor Society — 2007-2011

EXPERIENCE (ACADEMIA)

Research Assistant — University of Colorado, Boulder
Summer 2015 - Present — Boulder, CO
Perform research under Prof. Bor-Yuh Evan Chang in the Programming Languages and Verification Group, studying program analysis and verification, focusing on analysis techniques for modern dynamic languages.

Course Assistant/Teaching Assistant — University of Colorado, Boulder
Fall 2017, Summer 2019, Spring 2020 — Boulder, CO
Ran office hours, helped design problem sets and exams, and offered one-on-one tutoring sessions in both graduate and undergraduate level Compiler Design and Programming Languages courses. As a course assistant, additionally designed and taught approximately 10 lectures per semester, in both remote and in-person formats.

Research Assistant — University of Michigan
Summer 2014 — Ann Arbor, MI
Performed research under Prof. Michael Wellman in the Strategic Reasoning Group, studying machine learning-based high-frequency trading algorithms using empirical game-theoretic models.

EXPERIENCE (INDUSTRY)

Software Engineer Intern — Facebook
Fall 2019 — London, UK
Worked in the static analysis tools (Infer) team on the Sledge analyzer, adding new abstract domains and formalizing its correctness guarantees.

Software Engineer Intern — Google
Summer 2018 — Sunnyvale, CA
Worked on the open-source Error Prone static analyzer, improving the Java nullability analysis and implementing a novel nullness type inference algorithm.

Program Analysis Intern — Uber
Summer 2017 — Palo Alto, CA
Built static analysis tooling to detect threading defects in functional-reactive Android applications.

PUBLICATIONS

Demanded Abstract Interpretation
Benno Stein, Bor-Yuh Evan Chang, and Manu Sridharan. 2021. In *Proceedings of the ACM SIGPLAN International Conference on Programming Language Design and Implementation (PLDI).*

Static Analysis with Demand-Driven Value Refinement
Benno Stein, Benjamin Barslev Nielsen, Bor-Yuh Evan Chang, and Anders Møller. 2019. In *Proceedings of the ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA).*

Safe Stream-based Programming with Refinement Types
Benno Stein, Lazaro Clapp, Manu Sridharan, and Bor-Yuh Evan Chang. 2018. In *Proceedings of the IEEE/ACM International Conference on Automated Software Engineering (ASE).*

AWARDS AND HONORS

Ralph J. Slutz Student Excellence Award, CUB CS Dept. 2021-2022
Outstanding Research Award, CUB CS Dept. 2020-2021
Distinguished Student Speaker Award, CUB CS Dept. 2018
Outstanding Service Award, CUB CS Dept. 2017-2018
Dean's Graduate Assistantship, CU Boulder 2015-2016
ACM Student Research Competition, PLDI, 2nd Place 2016

SPEAKING

Paper and Poster Presentation, PLDI '21 (virtual) Summer 2021
Paper and Poster Presentation, OOPSLA '19 Fall 2019
Paper Presentation, ASE '18 Summer 2018
Graduate Research Forum, CU Boulder Fall 2017
PL & Verification Seminar, CU Boulder Fall 2017
Student Research Presentation, Oregon PL Summer School Spring 2016
ACM Student Research Competition, PLDI Spring 2016
Math Department Colloquium, Williams College Fall 2014
REU Research Forum, University of Michigan Summer 2014
Hudson River Undergraduate Math Conference Spring 2013

SERVICE

Chair, PhD Student Faculty Search Committee 2016-2017
Organized and participated in student interviews for visiting faculty candidates, compiled PhD student feedback, and served as liaison to faculty search committee.

Member, Computer Science Student Advisory Committee 2013-2014
Met with visiting speakers and job candidates to the Williams computer science department and provided feedback on job candidates. Organized department meetings and social events. Elected by peers as one of two student representatives.

Reviewing
Reviewed papers and participated in peer-review discussion/debate for the following venues:

- International Conference on Computer-Aided Verification (**CAV**) 2021
- Static Analysis Symposium (**SAS**) (Artifact Evaluation Committee) 2019
- Symposium on Principles of Programming Languages (**POPL**) 2019
- Asian Symposium on Programming Languages and Systems (**APLAS**) 2017
- International Conference on Computer-Aided Verification (**CAV**) 2017
- Static Analysis Symposium (**SAS**) 2016