

David Dinh

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- EDUCATION** *PhD (in progress), Computer Science* 2015 to 2020 (expected)
UC Berkeley. Advisor: James Demmel
- BS (honors), Electrical Engineering and Computer Science* 2012 to 2015
UC Berkeley.
- RESEARCH EXPERIENCE** *Graduate Student Researcher, UC Berkeley* 2015 to Present
- (2016-Present) Working on communication lower bounds and techniques for optimizing linear functions over Brascamp-Lieb polytopes.
 - (2015-2016) Developed algorithms and programming framework for nested dataflow and cache-oblivious wavefront algorithms.
- Research Assistant, ASPIRE Lab, UC Berkeley* 2013 to 2015
- (2014) Added dynamic memory allocation via reducer hyperobjects to space-bounded scheduling framework. Developed DAG-analysis heuristics in order to reduce the need for autotuning.
 - (2013) Wrote an domain-specific embedded language for divide-and-conquer algorithms in Python that compiles to Cilk Plus.
- PUBLICATIONS** *Extending the Nested Parallel Model to Nested Dataflow Model with Provably Efficient Schedulers*
David Dinh, Harsha Simhadri, and Yuan Tang. SPAA 2016. Preprint: arXiv:1602.04552
- POSTERS** *Online BFS/DFS Selection with Space-Bounded Recursive PDF Schedulers.*
David Dinh and Harsha Simhadri. ASPIRE Summer Retreat, 2016.
- Provably Efficient Scheduling of Dynamically Allocating Programs on Parallel Cache Hierarchies*
David Dinh, Harsha Simhadri, Guy Blelloch, Philip Gibbons, James Demmel, and Armando Fox. ASPIRE Winter Retreat 2016.
- Dynamic Allocation and BFS/DFS Heuristics for Space-Bounded Scheduling*
David Dinh and Harsha Simhadri. ASPIRE Winter Retreat 2015. Winner of Best Undergraduate Poster award at IAP Berkeley Workshop on the Future of Cloud Computing.
- Predicting BFS/DFS Interleavings for Recursive Matrix Multiply*
David Dinh and Harsha Simhadri. ASPIRE Summer Retreat 2014.
- A FRPA Specializer for ASP*
ASPIRE Winter Retreat 2014.

**TEACHING
EXPERIENCE**

Instructor: CS70 (Discrete Math and Probability) Summer 2016
Large (297 students) lower-division class covering logic, probability, and number theory. Gave lectures, wrote exams, and managed team of 36 course staff (TAs, readers, and academic interns).

Teaching Assistant: ASPIRE 101X (Short course on Parallel Programming) Summer 2014 and Summer 2015
Introductory class on concepts of parallel programming. Led sessions where students parallelized a particle simulation using OpenMP and MPI on NERSC supercomputers.

Lab Assistant: CS61BL (Data Structures and Programming Methodology) Summer 2013
Course topics include data structures, asymptotic analysis, and methodology for dealing with large codebases. Assisted students with course concepts and debugging in discussion sections.

**COMPUTER
SKILLS**

Languages: Mathematica, Haskell, C++, C, Java, Python, MATLAB, R, LaTeX, Shell scripting
Libraries: Cilk Plus, OpenMP
Tools: Git, Vim, Emacs