

# Virginia Smith

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## Education

- 2012–2017 **MS & PhD, Computer Science**, *University of California, Berkeley*  
Advisors: Michael I. Jordan and David Culler  
Thesis: *System-Aware Optimization for Machine Learning at Scale*
- 2008–2012 **BA, Math & BA, Computer Science, Highest Distinction**, *University of Virginia*

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## Experience

- 2018– **Assistant Professor**, *Carnegie Mellon University*
- 2017–2018 **Postdoctoral Researcher**, *Stanford University*
- 2012–2017 **Research Assistant**, *UC Berkeley*
- 2014 **Search Intern**, *Google*
- 2012 **Research Intern**, *UVA Center for Diabetes Technology*
- 2011–2012 **Distinguished Majors Program**, *UVA Computer Science Department*
- 2011 **Information Technology for Sustainability REU**, *University of California, Berkeley*
- 2010 **High Performance Computing REU**, *University of Maryland*

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## Awards

- 2017 Outstanding GSI Award
- 2016 Rising Stars in EECS, Invited Participant
- 2015 MLconf Industry Impact Student Research Award
- 2014–2017 National Science Foundation Graduate Research Fellowship
- 2014 National Defense Science and Engineering Graduate Fellowship
- 2014 Tong Leong Lim Pre-Doctoral Prize
- 2014 Google Anita Borg Memorial Scholarship
- 2012–2014 Chancellor’s Fellowship
- 2012 College of Engineering Fellowship
- 2012 Department of Electrical Engineering and Computer Sciences Excellence Award
- 2012 CRA Outstanding Undergraduate Research Award, Honorable Mention
- 2012 Rader Undergraduate Research Award (UVA Top Undergraduate CS Research)
- 2008–2012 Echols Scholar (UVA Honors Program)
- 2008–2012 College Science Scholar (UVA Research Program)
- 2008 J. L. Wang Memorial Mathematics Scholarship

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## Selected Publications

### Preprints

**V. Smith**, S. Forte, C. Ma, M. Takac, M. I. Jordan, and M. Jaggi, “CoCoA: A general framework for communication-efficient distributed optimization,” <https://arxiv.org/abs/1611.02189>.

### Refereed Conference or Journal

**V. Smith**, C.-K. Chiang, M. Sanjabi, and A. Talwalkar, “Federated multi-task learning,” in *Neural Information Processing Systems (NIPS)*, 2017.

C. Ma, J. Konecny, M. Jaggi, **V. Smith**, M. I. Jordan, P. Richtarik, and M. Takac, “Distributed optimization with arbitrary local solvers,” *Optimization Methods and Software*, 2017.

**V. Smith**, M. Connor, and I. Stanton, “Going in-depth: Finding longform on the web,” in *Conference on Knowledge Discovery and Data Mining (KDD)*, 2015.

C. Ma\*, **V. Smith**\*, M. Jaggi, M. I. Jordan, P. Richtarik, and M. Takac, “Adding vs. averaging in distributed primal-dual optimization,” in *International Conference on Machine Learning (ICML)*, 2015.

M. Jaggi\*, **V. Smith**\*, M. Takac, J. Terhorst, S. Krishnan, T. Hofmann, and M. I. Jordan, “Communication-efficient distributed dual coordinate ascent,” in *Neural Information Processing Systems (NIPS)*, 2014.

E. Sparks, A. Talwalkar, **V. Smith**, X. Pan, J. Gonzalez, T. Kraska, M. I. Jordan, and M. J. Franklin, “MLI: An API for user-friendly distributed machine learning,” in *International Conference on Data Mining (ICDM)*, 2013.

J. Taneja, **V. Smith**, D. Culler, and C. Rosenberg, “A comparative study of high renewables penetration electricity grids,” in *IEEE International Conference on Smart Grid Communications*, 2013.

A. Aswani, N. Master, J. Taneja, **V. Smith**, A. Krioukov, D. Culler, and C. Tomlin, “Identifying models of HVAC systems using semiparametric regression,” in *American Control Conference (ACC)*, 2012.

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## Invited Talks

- 2017 ML Systems Workshop at NIPS
- 2017 Google Seattle
- 2017 Carnegie Mellon University
- 2017 Massachusetts Institute of Technology
- 2017 University of Washington
- 2017 University of California, Los Angeles
- 2017 Harvey Mudd College
- 2017 Microsoft Research, New England
- 2017 Microsoft Research, NYC
- 2017 Microsoft Research and MSR-NExT, Seattle
- 2017 SIAM Conference on Optimization (SIOPT)
- 2016 The Machine Learning Conference (MLconf)
- 2016 Berkeley Artificial Intelligence Research Lab (BAIR)
- 2016 ML Systems Workshop at ICML
- 2015 The Machine Learning Conference (MLconf)
- 2015 Modeling and Optimization: Theory and Applications Conference (MOPTA)
- 2015 SF Bay Area Machine Learning Meetup
- 2014 Distributed Machine Learning and Matrix Computations Workshop at NIPS
- 2014 UC Berkeley AMP Camp 5
- 2014 Bay Area Machine Learning Symposium (BayLearn)

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## Service and Activities

- 2017–2018 **Co-Organizer**, *SysML: Systems and Machine Learning Conference*
- 2015–2017 **Co-Founder and Organizer**, *Women in Technology Leadership Round Table (wit.berkeley.edu)*
- 2014–2015 **Co-President**, *UC Berkeley’s Women in Computer Science and Engineering (WICSE)*
- 2013–2014 **Treasurer**, *Women in Computer Science and Engineering (WICSE)*
- 2012–2013 **Secretary**, *Women in Computer Science and Engineering (WICSE)*

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## Reviewing

Neural Information Processing Systems (Best Reviewer Award 2017), International Conference on Machine Learning, Journal of Machine Learning Research, Foundations and Trends in Machine Learning