ECE Department
Carnegie Mellon University
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Virginia Smith

Education

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

2008–2012 **BA, Mathematics & BA, Computer Science, Highest Distinction**, *University of Virginia*

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*

Awards

2018 Google Faculty Research Award

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

Selected Publications

Preprints

T. Dao, A. Gu, A. Ratner, V. Smith, C. D. Sa, and C. Re, "A kernel theory of modern data augmentation," *https://arxiv.org/abs/1803.06084*, 2018.

Refereed Conference or Journal

V. Smith, S. Forte, C. Ma, M. Takac, M. I. Jordan, and M. Jaggi, "CoCoA: A general framework for communication-efficient distributed optimization," *Journal of Machine Learning Research*, 2018.

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.

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.

Invited Talks

2018 Microsoft Research Faculty Summit
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 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 Bay Area Machine Learning Symposium (BayLearn)

Service and Activities

2018–2019 **Program Chair**, *SysML: Systems and Machine Learning Conference*
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)*
2012–2014 **Officer**, *Women in Computer Science and Engineering (WICSE)*

Reviewing

Neural Information Processing Systems (Best Reviewer Award 2017), International Conference on Machine Learning (Outstanding Reviewer 2018), Journal of Machine Learning Research, Foundations and Trends in Machine Learning