

Curriculum Vitae: Soham De

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| CONTACT INFORMATION | DeepMind, c/o Google UK, 6 Pancras Square, London, United Kingdom N1C 4AG | https://sohamde.github.io/ Email: sohamde.ml@gmail.com |
| RESEARCH | Machine Learning, Optimization, Game Theory | |
| EDUCATION | University of Maryland , College Park, MD, USA Ph.D., Computer Science, 2013 - 2018 Advisors: Dana Nau, Tom Goldstein Jadavpur University , Kolkata, India B.E., Computer Science & Engineering, 2009 - 2013 | |
| PROFESSIONAL EXPERIENCE | Research Scientist at DeepMind, Google UK Research in machine learning with emphasis on optimization, generalization and adversarial robustness of models. | September 2018 - Present |
| | Research Intern at DeepMind, Google UK Research in automated optimization methods for training neural networks. | June-Oct 2017 |
| | Research Intern at Toyota Technological Institute at Chicago Research in learning subword units for automatic speech recognition systems. | May-July 2012 |
| JOURNAL PUBLICATIONS | <ol style="list-style-type: none">Joshua Conrad Jackson, Michele Gelfand, Soham De, and Amber Fox. <i>The loosening of American culture over 200 years is associated with a creativity-order trade-off</i>. Nature Human Behaviour, 2019.Soham De, Michele Gelfand, Dana Nau and Patrick Roos. <i>The Inevitability of Ethnocentrism Revisited: Ethnocentrism Diminishes As Mobility Increases</i>. Scientific Reports, 2015. (Impact Factor: 5.525) | |
| CONFERENCE PUBLICATIONS | <ol style="list-style-type: none">Krishnamurthy Dvijotham, Robert Stanforth, Soham De, Sven Gowal, Chongli Qin, Pushmeet Kohli. <i>Scaling tight relaxations for neural network verification</i>. UAI, 2019. (Oral; Acceptance Rate: 7.7%)Soham De, Dana S. Nau, Xinyue Pan, and Michele J. Gelfand. <i>Tipping Points for Norm Change in Human Cultures</i>. SBP-BRiMS (Short Paper), 2018.Soham De*, Hao Li*, Zheng Xu, Christoph Studer, Hanan Samet and Tom Goldstein, <i>Training Quantized Nets: A Deeper Understanding</i>. NIPS 2017 (* denotes equal contribution). (Acceptance Rate: 20.9%)Soham De, Abhay Yadav, David Jacobs and Tom Goldstein. <i>Automated Inference with Adaptive Batches</i>. AISTATS, 2017. (Oral; Acceptance Rate: 5.2%)Soham De, Dana Nau and Michele Gelfand. <i>Understanding Norm Change: An Evolutionary Game-Theoretic Study</i>. AAMAS, 2017. (Oral; Acceptance Rate: 21.3%)Carlos Castillo*, Soham De*, Xintong Han*, Bharat Singh*, Abhay Kumar Yadav* and Tom Goldstein. <i>Son of Zorn's Lemma: Targeted Style Transfer Using Instance-aware Semantic Segmentation</i>. ICASSP, 2017 (* denotes equal contribution). | |

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| | <ol style="list-style-type: none"> Siddharth Pal, Soham De, Tanmoy Chakraborty and Raluca Gera. <i>Visibility of Nodes in Network Growth Models</i>. NetSciX, 2017. (Oral) Soham De and Tom Goldstein. <i>Efficient Distributed SGD with Variance Reduction</i>. ICDM, 2016. (Oral; Acceptance Rate: 8.5%) Bharat Singh, Soham De, Yangmuzi Zhang, Tom Goldstein and Gavin Taylor. <i>Layer-Specific Adaptive Learning Rates for Deep Networks</i>. ICMLA, 2015. Zahra Ashktorab, Srijan Kumar, Soham De, and Jennifer Golbeck. <i>iAnon: Leveraging Social Network Big Data to Mitigate Behavioral Symptoms of Cyberbullying</i>. iConference (Social Media Expo), 2014. Soham De, Indradyumna Roy, Tarunima Prabhakar, Kriti Suneja, Sourish Chaudhuri, Rita Singh and Bhiksha Raj. <i>Plagiarism Detection in Polyphonic Music Using Monaural Signal Separation</i>. Interspeech, 2012. |
| WORKSHOP PUBLICATIONS | <ol style="list-style-type: none"> Samuel Smith, Erich Elsen and Soham De. <i>Momentum Enables Large Batch Training</i>. ICML Workshop on Theoretical Physics for Deep Learning, 2019. Amitabh Basu, Soham De, Anirbit Mukherjee and Enayat Ullah. <i>Convergence guarantees for RMSProp and ADAM in non-convex optimization and their comparison to Nesterov acceleration on autoencoders</i>. ICML Workshop on Modern Trends in Nonconvex Optimization for Machine Learning, 2018. Soham De*, Hao Li*, Zheng Xu, Christoph Studer, Hanan Samet and Tom Goldstein, <i>Towards a Deeper Understanding of Training Quantized Neural Networks</i>. ICML Workshop on Principled Approaches to Deep Learning (PADL) 2017 (* denotes equal contribution). (Acceptance Rate: 20.9%) Soham De, Tom Goldstein. <i>CentralVR: A framework for variance-reduced distributed optimization</i>. AAAI 2017 Workshop on Distributed Machine Learning. Zheng Xu, Soham De, Mario A. T. Figueiredo, Christoph Studer, Tom Goldstein. <i>An Empirical Study of ADMM for Nonconvex Problems</i>. NIPS 2016 Workshop on Nonconvex Optimization for Machine Learning: Theory and Practice. Doug Burdick, Soham De, Louiqa Raschid, Mingchao Shao, Zheng Xu, Elena Zotkina. <i>resMBS: Constructing a Financial Supply Chain from Prospectus</i>. Second International Workshop on Data Science for Macro-Modeling, ACM, 2016. |
| AWARDS | <p>Fellowships</p> <ul style="list-style-type: none"> Future of Information Alliance Fellowship 2015 Dean’s Fellowship, University of Maryland, College Park 2013-15 <p>Paper Awards</p> <ul style="list-style-type: none"> Best Student Paper at ICML Workshop on Principled Approaches to DL 2017 <p>Other Awards</p> <ul style="list-style-type: none"> AAAS/Science Program for Excellence in Science 2016-19 KVPY (Kishore Vaigyanik Protsahan Yojana) Scholar 2008-09 |
| TEACHING EXPERIENCE | <p>Teaching Assistant, University of Maryland, College Park</p> <p>Algorithms (Instructor: Clyde Kruskal) Spring 2014 & Fall 2013</p> <p>Computational Game Theory (Instructor: Dana Nau) Fall 2014</p> <p>Discrete Structures (Instructor: Tom Goldstein) Fall 2016, Fall 2017 & Spring 2018</p> |
| SERVICE | Reviewer at: NIPS 2016, ICML 2018, Neurips 2018 |