

CONTACT INFORMATION	Electrical Engineering Department, Stanford University Stanford, CA 94305	<i>Web:</i> amansinha.org <i>Email:</i> amans@stanford.edu
RESEARCH INTERESTS	Optimization, machine learning, control theory, data science, computational modeling & simulation	
EDUCATION	Stanford University , Stanford, CA <i>Degree:</i> PhD. in Electrical Engineering (expected in June 2019) Fannie and John Hertz Foundation Fellowship, William R. Hewlett Stanford Graduate Fellowship <i>Sept. 2014-Present</i>	
	University of Cambridge , Cambridge, UK <i>Degree:</i> M.Phil. in Information Engineering Churchill Scholarship <i>Oct. 2013-Aug. 2014</i>	
	Princeton University , Princeton, NJ <i>Degree:</i> B.S.E. in Mechanical and Aerospace Engineering <i>Certificates:</i> Applications of Computing, Applied and Computational Mathematics Valedictorian <i>Sept. 2009-June 2013</i>	
RESEARCH AND WORK EXPERIENCE	Information Systems Lab , Stanford University <i>Researcher</i> (Advisors: John Duchi, Nick Bambos) – Researching theoretical and applied problems in optimization applied to machine learning contexts – Projects include minimizing viral propagations in large networks, developing efficient techniques for distributionally robust optimization, and building scalable methods for testing self-driving cars <i>Sept. 2014-Present</i>	
	InSITE Fellowship , Stanford University <i>Fellow</i> – InSITE Fellowships pair entrepreneurially-minded graduate students with startups and venture capital firms – Consulted with seed-stage VC firm Uncork Capital <i>Nov.-May 2017</i>	
	Creasys, LLC <i>Founder, President</i> – Startup develops mobile productivity apps – TeXscribe (currently available for iOS) converts handwriting to LaTeX and lets users store their work in the cloud. More info available at www.texscribe.me <i>July 2013-Present</i>	
	Toyota Research Institute , Cambridge, MA <i>Researcher</i> (Managers: Jon DeCastro, Russ Tedrake) – Applied distributionally robust optimization methods to system verification and behavior-planning algorithms for autonomous driving <i>June-Sept. 2017</i>	
	Quantifind , Menlo Park, CA <i>Data Scientist</i> – Startup offers explanatory analytics solutions targeted towards marketing – Developed algorithms that discover language patterns in Twitter correlating with brand revenue <i>June-Sept. 2016</i>	
	Control Group & Machine Learning Group , University of Cambridge <i>Researcher</i> (Advisors: Glenn Vinnicombe, Carl Rasmussen) – Researched distributed machine learning over networks – Developed techniques to characterize and improve the robustness and accuracy of Gaussian process regression in distributed systems <i>Oct. 2013-Aug. 2014</i>	
	Microsoft Online Services Division: adCenter , Microsoft (Bellevue, WA) <i>Software Development Engineering Intern</i> (Manager: Dragos Barac) – Developed a device detection and identification feature to enable the intelligent delivery of ads to mobile and tablet devices in Bing search requests <i>June-Aug. 2012</i>	

Merck Research Labs: Imaging Dept., Merck & Co. (West Point, PA) *June-Aug. 2011*
Intern (Manager: Dinko Gonzalez Trotter)
– Developed software for the automated segmentation and registration of medical images used in pre-clinical trials of drug development

Gas Dynamics Laboratory, Princeton University *June-Aug. 2010*
Intern (Advisor: Alexander Smits)
– Researched the three-dimensional nature of large-scale motions in fully turbulent pipe flow

PAPERS

O’Kelly, M., Sinha, A., Namkoong, H., Duchi, J., Tedrake, R. Scalable end-to-end autonomous vehicle testing via rare-event simulation. *NIPS*, 2018.
Sinha, A., Namkoong, H., Duchi, J. Certifying some distributional robustness with principled adversarial training. *ICLR*, 2018.
Smuck, M., Muaremi, A., Zheng, P., Norden, J., Sinha, A., Hu, R., Tomkins-Lane, C. Objective measurement of function following lumbar spinal stenosis decompression reveals improved functional capacity with stagnant real-life physical activity. *The Spine Journal*, 2018.
Namkoong, H., Sinha, A., Yadlowsky, S., Duchi, J. Adaptive sampling probabilities for non-smooth optimization. *ICML*, 2017.
Norden, J., Smuck, M., Sinha, A., Hu, R., Tomkins-Lane, C. Objective measurement of free-living physical activity (performance) in lumbar spinal stenosis: are physical activity guidelines being met? *The Spine Journal*, 2017.
Sinha, A., and Duchi, J. Learning kernels with random features. *NIPS*, 2016.
Sinha, A., Duchi, J, and Bambos, N. Dynamic management of network risk from epidemic phenomena. *IEEE Conference on Decision and Control*, 2015.
Sinha, A. Distributed gaussian process regression in networked systems. *University of Cambridge M.Phil. Thesis*. August 2014.
Sinha, A. Distributed consensus protocols in adaptive multi-agent systems. *Princeton University Senior Thesis*. May 2013.
Hellström, L., Sinha, A., and Smits, A. Visualizing the very-large-scale motions in turbulent pipe flow. *Physics of Fluids*, 23:011703, 2011.

TALKS

Certifying some distributional robustness with principled adversarial training. *ICLR*. Vancouver, May 2018.
A numerical toolkit for automated segmentation and registration. *Presented at Merck Imaging Department*. Aug. 2011.
Using riblets for airfoil drag reduction: a CFD analysis. *AAAS National Conference*. Chicago, Feb. 2009.

HONORS AND AWARDS

Numerical Technologies Founders Prize (for top rank in PhD Qualifying Exam) *Feb. 2015*
William R. Hewlett Stanford Graduate Fellowship *Nov. 2014*
Elected as Valedictorian for Princeton’s Class of 2013 *Apr. 2013*
Fannie & John Hertz Foundation Fellowship *Apr. 2013*
Churchill Scholarship *Jan. 2013*
Elected to the Phi Beta Kappa Society, Princeton Chapter *Sept. 2012*
Barry M. Goldwater Scholarship *Mar. 2012*
Elected to the Tau Beta Pi Engineering Honor Society, Princeton Chapter *Nov. 2011*
National Merit Scholarship *Apr. 2009*
3-time Medalist at PA Junior Academy of Science State Competition *May 2007, 2008, 2009*

TECHNICAL SKILLS AND PROFICIENCY

Languages: Java, C, C++, C#, Objective-C, Python, SQL, Assembly (IA-32), Fortran
Applications: MATLAB, Mathematica, Xcode, TecPlot, Pro/E, SolidWorks, Visual Studio
Frameworks: Django, AWS, Tensorflow, Drake