

# Nikhil Garg

nkgarg@stanford.edu • gargnikhil.com

## EDUCATION

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### Stanford University, August 2015 - Present

Stanford, CA

*PhD Candidate, Electrical Engineering, (Advisors: Ashish Goel & Ramesh Johari)*

*MS, Electrical Engineering, 2017*

*Funded by NSF Graduate Research Fellowship*

### University of Texas at Austin, May 2015

Austin, TX

*BS, Electrical and Computer Engineering, Highest and Special Honors*

*BA, Plan II Honors (Liberal Arts)*

*Thesis: User Association in Dense Next-Generation Wireless Networks (Advisor: Jeff Andrews)*

*Project: ProjectAlexandria.net: Book Recommendation & Exploration Engine (Advisor: Constantine Caramanis)*

## INDUSTRY EXPERIENCE

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### Uber

*Data Science Intern, Marketplace*

San Francisco, CA

*June 2018 - September 2018*

### Microsoft

*Software Development Engineering Intern, Bing Ads*

Bellevue, WA

*May 2014 - August 2014*

### NASA Glenn Research Center

*Research Associate, NASA Space Academy*

Cleveland, OH

*June 2013 - August 2013*

## RESEARCH EXPERIENCE

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### Implementable Algorithms for Social Choice

*PhD Research Assistant under Prof. Ashish Goel*

Stanford

*September 2015 - Present*

### Designing Online Markets

*PhD Research Assistant under Prof. Ramesh Johari*

Stanford

*June 2016 - Present*

### Wireless Networks and Communications Group

*Research Assistant under Prof. Jeffrey Andrews*

UT Austin

*August 2014 - May 2015*

### Mobile and Pervasive Computing Group

*Research Assistant under Prof. Christine Julien*

UT Austin

*January 2012 - May 2013*

### Autonomous Vehicles Lab, Learning Agents Research Group

*Student - Freshmen Research Initiative*

UT Austin

*January 2012 - May 2012*

## POLICY EXPERIENCE

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### IEEE-USA Insight Magazine

*Monthly Column Writer*

*August 2015 - December 2015*

### IEEE-USA, Washington Internship for Students of Engineering Program

*Technology Policy Associate*

Washington, DC

*June 2015 - August 2015*

### Texas Senate

*Legislative Intern, State Senator Davis's Legislative Office*

Austin, TX

*August 2013 - December 2013*

### Strauss Center for International Security and Law

UT Austin

## TEACHING EXPERIENCE

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### Department of Electrical & Computer Engineering

Teaching Assistant for EE 306 (Intro to Computing) under Prof. Yale Patt

UT Austin

August 2013 - December 2013

### Department of Mathematics

Learning Assistant for Integral Calculus

UT Austin

January 2012 - May 2012

## PROFESSIONAL & RESEARCH ACTIVITIES

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### Fellowships

- National Science Foundation Graduate Fellowship, 2015-2018
- Stanford McCoy Center for Ethics in Society Graduate Fellow, 2017-2018

### Talks

- *Reputation, Trust, and Markets*, Stanford MS&E 190, 2018
- *Rating Systems for Online Platforms: A Design via Comparisons*, INFORMS, 2017
- *Designing Reputation Systems for Online Platforms: Pairwise Comparisons*, Marketplace Innovation Workshop, 2017
- *Reputation, Trust, and Markets*, Stanford MS&E 190, 2017
- *Pairwise Comparisons for Online Reputation Systems (Poster)*, Stanford Computer Forum, 2017
- *Collaborative Optimization for Collective Decision Making in Continuous Spaces*, WWW, 2017
- *Impact of Dual Slope Path Loss on User Association in HetNets*, Globecom Workshop on HetNets, 2015

### Reviewing

- PC Member, WWW 2018 Big Web Track
- Markets for Good's *Good Data Grant*, 2016

### Organization

- Stanford Social Algorithms (SOAL) Seminar, 2017-2018
- Stanford Research on Algorithms, Incentives, and Networks (RAIN) Seminar, 2016-2017
- Stanford EE Admit Visit Day Committee, 2017
- UT Austin HKN Honor Society Student Chapter, 2013-2014
- UT Austin IEEE Computer Society Student Chapter, 2011-2013

### Consulting Activities

- **Jet Blue Technology Ventures**, *Machine Learning Due Diligence*, 2017 - Present
- **SNCF**, *Machine Learning/Digitalization*, 2017
- **DAS Worldwide | Wireless Everywhere**, *Wireless Engineering and Strategy*, 2016-2017

## PUBLICATIONS

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### Working Papers

3. NG and Ramesh Johari. 2018. Designing Optimal Binary Rating Systems. *In Submission*.
2. NG and Ramesh Johari. 2018. Designing Rating Systems for Online Platforms.
1. NG, Ashish Goel, and Ben Plaut. 2018. Markets for Public Decision-making.

### Journal Articles

1. NG, Londa Schiebinger, Dan Jurafsky, and James Zou. 2018. Word embeddings quantify 100 years of gender and ethnic stereotypes. *Proceedings of the National Academy of Sciences (PNAS)* (April 2018).

### Conference

3. NG, Vijay Kamble, Ashish Goel, David Marn, and Kamesh Munagala. 2017. Collaborative Optimization for Collective Decision-making in Continuous Spaces. In *International Conference on World Wide Web (WWW)*.
2. NG, Sarabjot Singh, and Jeffrey Andrews. 2015. Impact of Dual Slope Path Loss on User Association in HetNets. In *IEEE Globecom Workshops (GC Wkshps)*.
1. Beth Lewandowski, Kier Fortier, NG, Victor Rielly, Jeff Mackey, Tristan Hearn, Angela Harrivel, and Bradford Fenton. 2015. Use of electroencephalography and galvanic skin response in the prediction of an attentive cognitive state. In *Health and Human Performance Research Summit, Dayton, CO*.

### Other

4. NG (2015). "Fair Use and Innovation in Unlicensed Wireless Spectrum: LTE unlicensed and Wi-Fi in the 5 GHz unlicensed band," *IEEE-USA, Journal of Technology and Public Policy*.
3. NG. "Comments of Nikhil Garg: A Doctrine of Fair Use of Unlicensed Bands." Federal Communications Commission ET Docket No. 15-105 (LTE Unlicensed Docket), 26 Jun. 2015.
2. NG (2015). "Downlink and Uplink User Association in Dense Next-Generation Wireless Networks," Bachelors Thesis, University of Texas at Austin, Austin, TX.
1. Kier Fortier, NG, and Elizabeth Pickering. (2013). "Multi-Modal, Multi-State, Real-Time Crew State Monitoring System," NASA Glenn Research Center, Space Academy Research Report.

## RELEVANT COURSEWORK

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### Graduate Courses (Stanford)

Advanced Algorithms for Machine Learning, Reinforcement Learning, Deep Learning for NLP, Statistical Learning Theory, Approximation Algorithms, Convex Optimization, Statistical Signal Processing, Linear Dynamical Systems, Wireless Communications, Law Order & Algorithms, Theory of Probability

### Graduate Courses (UT Austin)

Probability & Stochastic Processes, Wireless Communications, Information Theory, Digital Communications

### Undergraduate Courses (UT Austin)

Real Analysis, Algorithms, Digital Signal Processing, Real-time DSP Lab, Digital Image and Video Processing, Embedded and Real-Time Operating Systems Lab, Computer Architecture, Digital Logic Design, Foreign Policy, Philosophy, Economics

## TECHNICAL SKILLS

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**General** Machine Learning, Deep Learning, Software, Optimization, Mechanism Design, Signal Processing, Communications, Robotics, Web development

**Languages & Tools** Python, TensorFlow, C, C++, Java, Julia, MATLAB, JavaScript

## **LANGUAGES**

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**English** Native

**Hindi** Fluent

**Spanish** Read/Understand