

Umang Bhatt

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Education

- 2019 – 2023 **University of Cambridge**, Cambridge, England, UK
Doctor of Philosophy in Machine Learning
- 2017 – 2019 **Carnegie Mellon University**, Pittsburgh, PA, USA
Masters of Science in Electrical and Computer Engineering
- 2015 – 2019 **Carnegie Mellon University**, Pittsburgh, PA, USA
Bachelors of Science in Electrical and Computer Engineering
- Advisor José Moura (CMU) and Adrian Weller (Cambridge)
- Courses Machine Learning (PhD), Advances in AI for Social Good (PhD), Network Science (PhD), Pattern Recognition Theory (PhD), Math for ML I & II (MS), Practical Data Science

Publications

Umang Bhatt, José Moura, Pradeep Ravikumar, & Adrian Weller. Evaluating, Aggregating, and Weighting Feature-based Model Explanations. Working Paper.

Aaron Roth, Samantha Reig, **Umang Bhatt**, Johnathan Schulgach, Tamara Amin, Afsaneh Doryab, Fei Fang, & Manuela Veloso. A Robot's Expressive Language Affects Human Strategy and Perceptions in a Competitive Game. Under review.

Umang Bhatt, Brian Davis, & José Moura. Diagnostic Model Explanations: A Medical Narrative. **Best Paper Award**. AAAI 2019 Spring Symposium on Interpretable AI for Well-being. Stanford, CA.

Umang Bhatt, Pradeep Ravikumar, & José Moura. Building Human-Machine Trust via Interpretability. AAAI 2019 Extended Abstract. Honolulu, HI.

Brian Davis*, **Umang Bhatt***, Kartikeya Bhardwaj*, Radu Marculescu, & José Moura. NIF: A Framework for Quantifying Neural Information Flow in Deep Networks. AAAI 2019 Workshop on Network Interpretability. Honolulu, HI.

Umang Bhatt, Pradeep Ravikumar, & José Moura. Towards Aggregating Weighted Feature Attributions. AAAI 2019 Workshop on Network Interpretability. Honolulu, HI.

Umang Bhatt. Maintaining the Humanity of Our Models. AAAI 2018 Spring Symposium on AI, Society, and Ethics. Stanford, CA.

Aaron Roth*, **Umang Bhatt***, Tamara Amin*, Afsaneh Doryab, Fei Fang, & Manuela Veloso. The Impact of Humanoid Affect Expression on Human Behavior in Game-Theoretic Setting. IJCAI 2018 Workshop on Humanizing Artificial Intelligence. Stockholm, Sweden.

Umang Bhatt, Edgar Xi, Shouvik Mani, & Zico Kolter. Intelligent Pothole Detection and Road Condition Assessment. Bloomberg Data for Good Exchange 2017. New York, NY.

Work Experience

- 2017 – 2019 **Percepsense**, *Co-Founder*, Pittsburgh, PA.
Building products to harvest vehicular telematics data - pipeline now used by Honda
- 2018 – 2018 **Microsoft**, *Program Management Intern*, Redmond, WA.
Project: explainable conversational agents for technical hardware documentation
- 2017 – 2017 **Groupon**, *Product Management Intern*, Chicago, IL.
Project: personalized and targeted pricing algorithms to drive purchase frequency
- 2016 – 2016 **InquisitHealth**, *Software Engineering Intern*, River Edge, NJ.
Project: extracting adverse health events from text messages (information retrieval)

Teaching Experience

- 2017 – now **Carnegie Mellon University**, *Teaching Assistant*, Pittsburgh, PA.
- S19 18-661 (Machine Learning for Engineers - Masters) taught by Gauri Joshi
 - F18 10-701 (Machine Learning - PhD) taught by Ziv Bar-Joseph and Pradeep Ravikumar
 - S18 15-388/15-688 (Practical Data Science) taught by Zico Kolter
 - F17 15-122 (Principles of Imperative Computation) taught by Illiano Cervessato
 - S17 15-110 (Principles of Computing) taught by Margret Reid-Miller

Talks

- 2019 Talk at the AAAI Spring Symposium on Interpretable AI. March 2019. Stanford, CA.
- 2019 Accepted Poster at the AAAI Student Poster Program. January 2019. Honolulu, HI.
- 2018 Poster at the Google Self-Organizing Conference on Machine Learning. November 2018. Toronto, Canada.
- 2018 Invited Talk and Moderator at AI LA's *AI and Society: Creating a Fair and Ethical Future*. October 2018. Pasadena, CA.
- 2018 Meeting of the Minds Undergraduate Poster Session. May 2018. Pittsburgh, PA.
- 2018 Talk at the AAAI Spring Symposium on AI, Society, and Ethics. March 2018. Stanford, CA.
- 2017 Talk on *Mobility, Training, and Cities* at Bloomberg's Data for Good Exchange. October 2017. New York, NY.
- 2017 Invited Case Study and Poster at University of Chicago's Data Science for Social Good. September 2017. Chicago, IL.

Service

- 2019 **ICLR Workshop on Debugging Machine Learning Models**, *Program Committee*.
- 2019 **AAAI/ACM Conference on AI, Ethics and Society**, *Student Programs Committee*.
- 2011 – now **BAPS Children's Activities**, *National Development Committee Member*, USA.
Plan, oversee, and speak at nation-wide conventions and weekly assemblies for over 5,000 Hindu children ages 6-14 with the team of fifteen other volunteers

Skills

Python, Java, C, C#, R, Javascript, Tensorflow, PyTorch, Matlab, HTML/CSS