Umang Bhatt

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umangsbhatt.github.io

Research Interests

Statistical machine learning, explainable artificial intelligence, and human-machine collaboration.

Education

2019 – 2023 **University of Cambridge**, Cambridge, UK.
Ph.D. in Machine Learning, Department of Engineering – Supervisor: Adrian Weller
Affiliations: Machine Learning Group, Computational and Biological Learning Lab

2015 – 2019 **Carnegie Mellon University**, Pittsburgh, PA.
B.S. and M.S., Electrical and Computer Engineering – Advisor: José Moura

Fellowships and Positions

2019 – now **Leverhulme Center for the Future of Intelligence**, *Student Fellow*, Cambridge, UK.

2019 – now **Partnership on AI**, *Research Fellow*, San Francisco, CA.

2017 – 2019 **Carnegie Mellon University**, *Research Assistant*, Pittsburgh, PA.
Worked with José Moura (ECE), Pradeep Ravikumar (MLD), and Zico Kolter (CSD)

Scholarships and Awards

2020 – 2021 The Alan Turing Institute Enrichment Studentship

2019 – 2022 Leverhulme Center for the Future of Intelligence PhD Scholarship

2019 – 2021 Partnership on AI Research Fellowship

2019 Lovett Family Endowed Scholarship

2019 Best Presentation Award at The AAAI Spring Symposium on Interpretable AI for Well-Being

2017 Carnegie Mellon Undergraduate Research Presentation Award

2017 NSF I-Corps Site Award – for research commercialization

2016 H. F. McCullough Memorial Scholarship

Publications

Conference Papers

[C7] **Umang Bhatt**, Adrian Weller, & José Moura. Evaluating and Aggregating Feature-based Model Explanations. *International Joint Conference on Artificial Intelligence (IJCAI) 2020*.

[C6] **Umang Bhatt**, Alice Xiang, Shubham Sharma, Adrian Weller, Ankur Taly, Yunhan Jia, Joydeep Ghosh, Ruchir Puri, José Moura, & Peter Eckersley. Explainable Machine Learning in Deployment. *ACM Conference on Fairness, Accountability, and Transparency (FAT*) 2020*.

[C5] Botty Dimanov, **Umang Bhatt**, Mateja Jamnik, & Adrian Weller. You Shouldn't Trust Me: Learning Models Which Conceal Unfairness From Multiple Explanation Methods. *European Conference on Artificial Intelligence (ECAI) 2020*.

[C4] Brian Davis*, **Umang Bhatt***, Kartikeya Bhardwaj*, Radu Marculescu, & José Moura. On Network Science and Mutual Information for Explaining Deep Neural Networks. *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2020*.

[C3] 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. *IEEE International Conference on Robot and Human Interactive Communication (ROMAN) 2019*.

[C2] **Umang Bhatt**, Pradeep Ravikumar, & José Moura. Building Human-Machine Trust via Interpretability. Extended Abstract. *AAAI Conference on Artificial Intelligence (AAAI) 2019*.

[C1] **Umang Bhatt**, Edgar Xi, Shouvik Mani, & J. Zico Kolter. Intelligent Pothole Detection and Road Condition Assessment. *Bloomberg Data for Good Exchange (D4GX) 2017*.

Selected Workshop Papers

[W4] Javier Antorán, **Umang Bhatt**, Tameem Adel, Adrian Weller, & José Miguel Hernández-Lobato. Getting a CLUE: A Method for Explaining Uncertainty Estimates. *ICLR Workshop on Machine Learning in Real Life 2020*. **(selected for oral presentation)**.

[W3] **Umang Bhatt**, Adrian Weller, Muhammad Bilal Zafar, & Krishna Gummadi. Counterfactual Accuracies for Alternative Models. *ICLR Workshop on Machine Learning in Real Life 2020*.

[W2] **Umang Bhatt**, Brian Davis, & José Moura. Diagnostic Model Explanations: A Medical Narrative. *AAAI Spring Symposium on Interpretable AI for Well-Being 2019*.

[W1] **Umang Bhatt**. Maintaining the Humanity of Our Models. *AAAI Spring Symposium on AI, Society, and Ethics 2018*.

Selected Talks

2020 Invited Talk at QuantumBlack (McKinsey) AI Seminar. May 2020. London, UK.

2020 Invited Talk at Cambridge University Science Festival. March 2020. Cambridge, UK.

2019 Invited Talk at Fiddler Labs. May 2019. Palo Alto, CA.

2018 Invited Talk and Moderator at AI LA's AI Ethics Symposium. October 2018. Pasadena, CA.

2017 Invited Case Study at University of Chicago's DSSG. September 2017. Chicago, IL.

Teaching Experience

2017 – 2019 **Carnegie Mellon University**, *Teaching Assistant*.

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 Cervesato

S17 15-110 (Principles of Computing) taught by Margret Reid-Miller

Service

Organizer ICML Workshop on Human Interpretability (2020)

Reviewer	NeurIPS (2019-2020), ICML (2019-2020), ACM Conference on AI and Finance (2020)
PC Member	ICLR Workshop on Debugging Machine Learning Models (2019), AAAI/ACM Conference on AI, Ethics and Society Student Programs (2019)

Professional Experience

Entrepreneurship

2018 – 2020 **MERAT**, *Co-Founder*, Seattle, WA.
Started a non-profit to help corporations adopt AI responsibly

2018 – 2020 **.406 Ventures**, *Student Fellow*, Boston, MA.
Sourced startups and performed first-round due diligence on ventures

2017 – 2019 **NavTalent (now HumanCapital)**, *Campus Director*, San Francisco, CA.
Connected top-tier engineers with high-growth, impact-driven startups

2017 – 2018 **Percepsense**, *Co-Founder*, Pittsburgh, PA.
Built products to harvest vehicular telematics data – pipeline acquired by ***Honda Motors***

Internships

2018 **Microsoft**, *Program Management Intern*, Redmond, WA.
Project: explainable conversational agents for technical hardware documentation

2017 **Groupon**, *Product Management Intern*, Chicago, IL.
Project: personalized and targeted pricing algorithms to drive purchase frequency

2016 **InquisitHealth**, *Software Engineering Intern*, New York, NY.
Project: speaker diarization and adverse event detection in doctor-patient conversations

Volunteering

2011 – 2019 **BAPS Children's Activities**, *National Development Committee*, USA.
Planned and oversaw nation-wide conventions and weekly assemblies on Hinduism for over 5,000 children, ages 6-14, with the team of fifteen other volunteers

Skills

Programming	Python, Java, C, C#, R, Javascript, Tensorflow, PyTorch, Matlab, HTML/CSS
Coursework	Advanced Probabilistic Machine Learning (CAM), Machine Learning (CMU), Advances in AI for Social Good (CMU), Network Science (CMU), Pattern Recognition Theory (CMU)
Languages	English (native), Gujarati (fluent), and Spanish (proficient)