Societal Impact of Data Science and Artificial Intelligence

Panel Session

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ABSTRACT

The explosion of interest in KDD and other Data Science/Machine Learning/AI conferences is just one of the many signs that these technologies are no longer confined to the realms of academia and a hand-full of tech companies. As our daily lives seamlessly integrate more and more data-driven applications, people's excitement is tempered by worry about the technologies' potential to disrupt their existence. Having worked for almost 30 years to design and develop these technologies, the KDD community now should examine and debate the impact of Machine Learning & AI on the broader world. Beyond the hype, where do we stand with respect to the dangers? What role can our community play to alleviate concerns around AI taking jobs, or taking over? How can the value derived from data be distributed fairly? Are concerns about inequity well-founded or rather largely problems of perception? What can be done to bring data hunger and data sharing concerns to a level of equilibrium? How do we prepare people to interact with intelligent systems at scale? Can we unleash the incredible responsiveness of the KDD community toward longer-term more impactful projects across sectors that are essential for social good, such as Health, Environmental Sustainability, and Public Welfare.

KEYWORDS

Artificial Intelligence; data-driven applications; society; AI dangers.

Moderator: Foster Provost

Foster Provost is Professor of Information Systems and Andre Meyer Faculty Fellow at New York University's Stern School of Business. Professor Provost studies data mining, machine learning, social network analysis and their alignment with business problems. He has won several awards, including the 2009 INFORMS Design Science award for social network-based marketing, IBM Faculty Awards for outstanding research in data mining and machine learning, a President's Award from NYNEX Science and Technology, Best Paper Awards from the ACM SIGKDD conference, and awards in SIGKDD's annual KDDCUP data mining competition. Foster Provost recently retired as Editor-in-Chief of the journal Machine Learning after 6+ years. He is a member of the editorial boards of the Journal of Machine Learning Research(JMLR) and the journal Data Mining and Knowledge Discover. He was elected as a founding board member of the International Machine Learning Society. He advises businesses and U.S. government agencies on policy and investments in data mining research, and on practical issues in applying data mining and machine learning. Professor Provost has a B.S. from Duquesne University in Physics and Mathematics and an M.A. and Ph.D. in Computer Science from the University of Pittsburgh.

Panelist: James Hodson

James co-founded and serves as the CEO of the AI for Good Foundation (www.ai4good.org). He is a researcher at the Jozef Stefan Institute Artificial Intelligence Laboratory in Slovenia and advises/invests in promising early stage companies with a strong AI component. Previously, James directed AI research at Bloomberg in New York, leading a team of 20 in a rich cross-disciplinary research agenda. He created several high-profile events for the AI, data science, non-profit, and policy communities such as the KDD Data Mining for Social Good Conference in August of 2014.

Panelist: Jeannette Wing

Jeannette M. Wing is Avanessians Director of the Data Science Institute and Professor of Computer Science at Columbia University. She came to Columbia in July 2017 from Microsoft, where she served as Corporate Vice President of Microsoft Research, overseeing a global network of research labs. She is widely recognized for her intellectual leadership in computer science, particularly in trustworthy computing. Jeannette's seminal essay, titled "Computational Thinking," was published more than a decade ago and is credited with helping to establish

the centrality of computer science to problem-solving in fields where previously it had not been embraced. Before joining Microsoft, Jeannette held positions at Carnegie Mellon University and at the National Science Foundation. She served Carnegie Mellon as Head of the Department of Computer Science and as Associate Dean for Academic Affairs of the School of Computer Science. At the National Science Foundation, she was Assistant Director of the Computer and Information Science and Engineering Directorate, where she oversaw the federal government's funding of academic computer science research. Her areas of research expertise include security and privacy; formal methods; programming languages; and distributed and concurrent systems. Jeannette has been recognized with distinguished service awards from the Computing Research Association and the Association for Computing Machinery. She is a Fellow of the American Academy of Arts and Sciences, American Association for the Advancement of Science, the Association for Computing Machinery, and the Institute of Electrical and Electronic Engineers. She holds bachelor's, master's, and doctoral degrees from MIT.

Panelist: Qiang Yang

Qiang Yang is a chair professor at the Computer Science and Engineering (CSE) Department of Hong Kong University of Science and Technology (HKUST), where he was a former head of the department and founding director of the Big Data Institute. Between 2012 and 2014, he was the founding director of the Huawei Noah's Ark Research Lab. His research interests include artificial intelligence including machine learning and data mining. He is a fellow of ACM, AAAI, IEEE, IAPR and AAAS. He received his PhD from the Computer Science Department at the University of Maryland, College Park and was a faculty member at the University of Waterloo and Simon Fraser University. He was the founding Editor in Chief of the ACM Transactions on Intelligent Systems and Technology (ACM TIST) and IEEE Transactions on Big Data. He was the Program Co-chair of ACM KDD 2010 and the General Chair of ACM KDD 2012. He was the PC Chair of IJCAI 2015. In 2017, he received the ACM SIGKDD Distinguished Service Award. He currently serves as the President of IJCAI and an executive council member of AAAI.

Panelist: Jennifer Neville

Jennifer Neville is the Miller Family Chair Associate Professor of Computer Science and Statistics at Purdue University. She received her PhD from the University of Massachusetts Amherst in 2006. She is currently an elected member of the AAAI Executive Council and she was recently PC chair of the 9th ACM International Conference on Web Search and Data. In 2012, she was awarded an NSF Career Award, in 2008 she was chosen by IEEE as one of "AI's 10 to watch", and in 2007 was selected as a member of the DARPA Computer Science Study Group. Her work, which includes more than 100 peer-reviewed publications with over 5000 citations, focuses on developing data mining and machine learning techniques for complex relational and network domains, including social, information, and physical networks.