



# BOGDANA RAKOVA

technology, innovation, global impact

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*Empowering visionaries to trust the transformative power of AI systems through mechanism design and innovation in the AI lifecycle. Excellent communication, project management, strategy, applied research, technical and multi-stakeholder engagement skills.*

## EXPERIENCE

### RESPONSIBLE AI LEADERSHIP

#### **Senior Trustworthy AI Fellow, Mozilla Foundation**

March, 2022 - Present

Building strategic engagements and tools that enable improved bias testing, explainability, governance, privacy, security, and robustness of AI. My work is centered on generative AI evaluation methods, meaningful transparency artifacts, and prototyping new models of consent and contestability.

#### **Research Manager, Responsible AI, Accenture**

March, 2019 - March, 2022

Fundamental part of the global Responsible AI team. Creating technical roadmaps across product and research teams, evolving new models of data governance, AI impact assessment frameworks and tools to enable our clients to operationalize fairness, accountability, and transparency of AI-enabled systems, contributing to just and equitable futures.

### DEEP TECHNICAL EXPERTISE

#### **Senior Machine Learning Research Engineer, Think Tank Team, Samsung Research America**

Dec, 2014 - Feb, 2019

Part of an interdisciplinary innovation research group - Think Tank Team. Working on rapid prototyping and experimentation to create new sensory experiences utilizing the power of data visualization, virtual reality, machine learning, and new modes of human-computer interaction.

#### **Co-founder and CTO, HutGrip - Future of Work Technology Startup**

Sept, 2012 - April, 2014

Co-founded a company after winning a startup-weekend event with an idea of a sensor system and a business model which aimed to empower workers in small and medium-sized manufacturing companies.

#### **Investigating the ethical and social science considerations of crisis response efforts**

Aug, 2020

Kaggle Task competition winner for my work on data visualization to map COVID-19 pandemic outbreak response efforts and policies with regards to the questions of: What are the enablers and barriers for the uptake of public health measures? What is the impact of public health measures for prevention and control?

### COALITION BUILDING

#### **IEEE P7010 working group leadership team**

Dec, 2018 - Dec 2020

Recommended Practice Standard for Assessing the Impact or Autonomous and Intelligent Systems on Human Well-being (IEEE 7010) - bringing together policy and tech innovation through a multi-stakeholder engagement process. Developed scenarios of how organizations and governments could implement the standard.

#### **Lead Editor, Springer International Journal of Community Well-being**

Dec, 2018 - Dec 2020

Lead editor for the Springer Intersections of Artificial Intelligence and Community Well-Being publication which brings together perspectives from researchers, policy experts, investigative journalists, artists, and others. Co-authored two research articles and coordinated the editorial and peer review process.

#### **Research Fellow, Partnership on AI**

Dec, 2019 - Dec 2020

Lead ethnographic interviews and qualitative research that questioned the business models and organizing structure of those building or using AI. The research report was published at the 23rd ACM Conference on Computer-Supported Cooperative Work and Social Computing. The project was foundational for the ABOUT ML ongoing multistakeholder initiative to enable responsible AI by increasing transparency and accountability of AI system documentation.

#### **Happiness Alliance nonprofit leadership team**

Dec, 2018 - Present

Core part of the Happiness Alliance nonprofit leadership team, managing a team of data scientists and engineers developing technical assets and infrastructure to enable the use of community well-being data in the design of policy interventions and systems change towards a well-being based economy.

#### **Alternative Autonomous Vehicles Futures, Harvard Berkman Klein Center**

Jan, 2018 - May, 2018

Co-lead a creative proposal towards a vision for mutual prosperity in the way autonomous vehicles are introduced to public roads, empowering all members of the communities they enter.

# DESIGNING TRUSTWORTHY AI SYSTEMS THAT EMPOWER ACCESS AND EQUITY

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## EDUCATION

### **Harvard Kennedy School Executive Program, Boston - Leading Successful Programs: Using Evidence to Assess Effectiveness**

May 2020

The program was led by Professor Dan Levy and Professor Julie Boatright Wilson. It gave me an in-depth understanding of policy impact evaluations—including their design, process, and a wide range of methodologies for measuring effectiveness.

### **Harvard Berkman Klein Center & MIT Media Lab - Assembly: Ethics and Governance of AI, Boston - Spring semester**

Jan 2018 - May 2018

The program was led by Professor Jonathan Zittrain and Professor Joi Ito. It gave me an in-depth understanding of the rising legal, policy, and regulatory considerations when investigating the unintended consequences of AI-driven systems.

### **Singularity University, Mountain View, CA — Graduate Studies Executive Program**

May 2012 - Aug 2012

Led by Ray Kurzweil and Peter Diamandis, the program allowed me to focus on AI and Robotics, learning from hands-on workshops and lectures with top researchers.

### **Bachelor of Computer Science, Sofia University St. Kliment Ohridski, Sofia, Bulgaria**

Oct 2008 - Sept 2012

I specialized in mathematics, algorithms, and machine learning, gaining an in-depth understanding of the theoretical foundations of the design of ML systems.

## SELECTED PUBLICATIONS

- Rakova, B., Shelby, R., & Ma, M. (2023). Terms-we-Serve-with: Five dimensions for anticipating and repairing algorithmic harm. *Big Data & Society*.
- Rakova, B., & Dobbe, R. (2023). Algorithms as social-ecological-technological systems: an environmental justice lens on algorithmic audits. FAccT '23: 2023 ACM Conference on Fairness, Accountability, and Transparency.
- Rakova, B. (2023). The Importance of Friction in AI Systems. Mozilla Foundation.
- Rakova, B. (2022). Slowing Down AI with Speculative Friction. Branch Magazine.
- Rakova, B., Valdivia, A., Dobbe, R. & Perez-Ortiz, M. (2022). The (eco)systemic challenges in AI. Introducing broader socio-technical and socio-ecological perspectives to the field of Artificial Intelligence. Workshop during the Human Hybrid AI conference.
- Havrda, M. & Rakova, B., (2020). Enhanced well-being assessment as basis for the practical implementation of ethical and rights-based normative principles for AI. In the Proceedings of 2020 IEEE International Conference on Systems, Man and Cybernetics (SMC).
- Rakova, B., Yang, J., Cramer, H., & Chowdhury, R., (2020). Where Responsible AI meets Reality: Practitioner Perspectives on Enablers for shifting Organizational Practices. In the Proceedings of the 23rd ACM Conference on Computer-Supported Cooperative Work and Social Computing CSCW 2021.
- Rakova, B. & Winter, A., (2020). Leveraging traditional ecological knowledge in ecosystem restoration projects utilizing machine learning. In the Proceedings of the ACM Knowledge Discovery and Data Mining (KDD) 2020 Conference Workshop on Fragile Earth: Data Science for a Sustainable Planet.
- Schiff, D., Rakova, B., Ayesh, A., Fanti, A., & Lennon, M. (2021). Explaining the Principles to Practices Gap in AI. IEEE Technology and Society Magazine, 40(2), 81-94.
- Musikanski, L., Rakova, B., Bradbury, J. et al. (2020). Artificial Intelligence and Community Well-being: A Proposal for an Emerging Area of Research. Springer International Journal of Community Well-Being.
- Rakova, B., & Chowdhury, R. (2019). Human self-determination within algorithmic sociotechnical systems. In the Proceedings of the Human-Centered AI: Trustworthiness of AI Models & Data (HAI) track at AAAI Fall Symposium.
- Rakova, B., & DePalma, N. (2018). Minority report detection in refugee-authored community-driven journalism using a Restricted Boltzmann Machines approach. In the Proceedings of the AI for Social Good NeurIPS 2018 Workshop.

## PATENTS

- **Electromagnetic Interference Signal Detection.** US20160259432A1 filed 05-12-2016, and issued 09-11-2018.
- **Identifying Device Associated With Touch Event.** US20160259451A1 filed 05-12-2016, and issued 10-16-2018.
- **Processing electromagnetic interference signals using machine learning.** US20160261268A1 filed 05-12-2016, and issued 11-27-2018. and WO2017090945A1 filed 11-21-2016, and issued 01-06-2017.
- **Optical detection and analysis of internal body tissues.** WO2016117898A1 filed 01-19-2016, and issued 07-28-2017.

## RECENT NEWS

- **Stanford Law School — Engaging on Responsible AI terms: Rewriting the small print of everyday AI systems**
- **Berkeley Institute for Data Science: Computational Social Science Forum** — gave a talk about my work and research: A Relational View on Ethics and Technology
- **MIT Sloan Management Review** article Putting Responsible AI Into Practice