

Bogdana Rakova

San Francisco, CA 94110
+1 (423) 255-7936
b.rakova@gmail.com
<http://bobirakova.com/>

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*

JANUARY 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 Program*

MAY 2012 - AUGUST 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

OCTOBER 2008 - SEPTEMBER 2012

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

PUBLICATIONS

- **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.
- 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. & 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. (2020). [Principles to Practices for Responsible AI: Closing the Gap](#). European Conference on AI (ECAI) Workshop on Advancing towards the SDGs: AI for a fair, just, and equitable world..
- **Rakova**, B., Chowdhury, R., & Yang, J., (2020). [Assessing the intersection of organizational structure and FAT* efforts within industry: implications tutorial](#). Conducted at the 2020 Conference on Fairness, Accountability, and Transparency.

RESEARCH INTERESTS

Better collaboration and communication interfaces between people and AI.

Investigating the broader social and economic implications of AI-driven systems.

Participatory methods and action research to better understand the intersection of AI and community well-being.

SKILLS

Excellent communication skills. Always strives to collaborate and be a good team player.

Statistical methods,
Machine Learning,
Rapid prototyping,
Data visualization,
Embedded Software
Development,
Android Application
Development

FRAMEWORKS

TensorFlow
Keras
Matlab

LANGUAGES

Python
C/C++/C#
JAVA,
Javascript

PUBLICATIONS

- **Rakova**, B., & Kahn, L. (2020). [Dynamic Algorithmic Service Agreements Perspective](#). In the Proceedings of the AAAI 2020 Spring Symposium Series.
- 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.
- Ortega-Avila, S., **Rakova**, B., Sadi, S., & Mistry, P. (2015). [Non-invasive optical detection of hand gestures](#). In proceedings of the 6th augmented human international conference (pp. 179-180).

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.

EXPERIENCE

Responsible AI, Accenture, San Francisco – Data Scientist

MARCH 2019 - PRESENT

Working directly with Accenture's Responsible AI Global Lead Rumman Chowdhury, I helped in establishing the Responsible AI team globally. My role includes conducting research, applied algorithmic impact assessments, and building tools to enable organizations to practically consider fairness, accountability, and transparency of the AI-enabled systems they are using or building internally.

Partnership on AI, San Francisco – Research Fellow, ABOUT ML

DECEMBER 2019 - DECEMBER 2020

Led qualitative research on the intersection of organizational structure and the integration of fairness, accountability, and transparency of AI practices in industry. The [project outcome](#) is accepted for publication at the 23rd ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW). The work was inspired by the fields of computational ethnography, organizational science, and the investigation of fairness, transparency, and accountability of AI.

CORD-19 Kaggle Challenge Winner – Investigating the ethical and social science considerations of crisis response efforts

AUGUST 2020

[Kaggle Task competition winner](#) for my work on the CORD-19 research dataset utilizing a NLP/NLU grammar-based knowledge extraction approach. I used 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? [Link to the Kaggle notebook and source code.](#)

IEEE P7010 – Contributor and part of the working group leadership team

DECEMBER 2018 - DECEMBER 2020

Major contributor to the Recommended Practice Standard for Assessing the Impact of Autonomous and Intelligent Systems on Human Well-being ([IEEE 7010](#)). Developed detailed scenarios of how organizations could implement the standard in different settings.

Springer – Lead Guest Editor for a Special Issue publication: AI & Community Well-being

DECEMBER 2018 - DECEMBER 2020

Lead guest editor for the [Special Issue: 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 articles for the special issue and coordinated the editorial and peer review process.

Happiness Alliance, Seattle — Board Member

DECEMBER 2018 - PRESENT

Part of the [Happiness Alliance NGO](#) - conducting leading research in the intersection of community well-being metric frameworks and investigating the impact of AI on community well-being..

Samsung Research America, Mountain View — Senior ML Research Engineer

DECEMBER 2014 - FEBRUARY 2019

Part of an interdisciplinary innovation research group - [Think Tank Team](#). Working on rapid prototyping and experimentation to make progress on challenging research questions in the fields of Conversational AI and Human-Computer Interaction. My work involved Machine Learning, Embedded Software Development, Signal Processing, Android Development, and others.

Singularity University, Mountain View — Networks & Computing Systems Teaching Fellow

JUNE 2014 - SEPTEMBER 2014

Designed and conducted interactive workshops in the fields of Machine Learning, Data Science, IoT, Sensors and others. The activities were part of the 3-month Graduate Studies Program developed for 80 international interdisciplinary participants.

Emailio, Mountain View — Backend Software Engineer

MAY 2014 - AUGUST 2014

Building a scalable web backend infrastructure on top of node.js, redis and others. Implementing ML classification algorithms for ranking emails based on people's interests.

HutGrip, Chattanooga — CTO and co-founder

SEPTEMBER 2012 - APRIL 2014

Working on helping small and medium sized manufacturing companies prevent failures on the production line by utilizing statistics and regression tools. My role included identifying what are the problems in different manufacturing processes, analyzing if our software cloud-based tool can provide data insights to help solve them and measure the results.

CompleIT, Sofia — Software Engineer

FEBRUARY 2010 - May 2012

Developing an open source visual prototyping tool for microcontrollers. Responsible for low-level C++ embedded development of the [platform for ARM-based controllers](#). Worked on data analysis and visualization software to guide the semi-automated execution of DNA electrophoresis experiments and visualize the result.

COMPETITION AWARDS & OTHERS

- **Berkeley BIDS 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](#)
- [Kaggle competition winner](#) for my work on the COVID-19 research dataset which aims to investigate the ethical and social science considerations regarding the COVID-19 pandemic outbreak response efforts.
- Co-lead a session during the **Foresight Institute** 2020 AGI Strategy conference - [Organizing for Beneficial AGI: Lessons From Industry](#).
- Featured as a Samsung Senior Research Engineer with my story of how "[Childhood play grows into AI](#)"
- **Connected Devices Fellow at Amplify Partners** - an early-stage venture capital fund focussed on Data Science, San Francisco, 2014.
- **Startup Weekend winner** in Sofia, 2012 with the HutGrip project.
- **Singularity University Global Impact Competition for Central and Eastern Europe**, 2012 - I was one of the two finalists who received a scholarship of \$25,000 for the Singularity University Graduate Studies Program in 2012.
- **Microsoft Imagine Cup**, 2011 - I reached the global finals in the biggest Microsoft student technology competition with a game about environmental sustainability. The project qualified in the top five in the World in the Game Design category.