

Samsara Counts

NSF CSGrad4US Fellow

January 2023

📍 Seattle, WA
🏠 samsaranc.github.io
✉ samsaranc@gmail.com
🐦 [samsaranc](https://twitter.com/samsaranc)
🌐 samsaranc

Education

2019 **George Washington University** B.S. in Computer Science and Math, minor in Creative Writing
Overall GPA: 3.5/4.0 C.S. Courses: Bias in AI, Machine Learning, Computer Vision, Theory of Computing
Computer Science GPA: 3.6 Continuous Algorithms, Algorithms, Operating Systems, Databases
Math Courses: Graph Theory, Real Analysis, Abstract Algebra, Complexity Theory

Experience

Amazon | *Data Scientist* | July 2022–Present

- Prototype and productionalize Machine Learning (ML) models for abuse detection on the Amazon retail site
- Develop strategy for and lead implementation of team's responsible AI mechanisms and infrastructure
- Co-lead end-to-end fairness and bias audits of team's ML systems and create mitigation strategies

Amazon Web Services | *Machine Learning Engineer* | September 2021–July 2022

- Productionized state-of-the-art ML bias and explainability methods for Amazon Sagemaker Clarify
- Designed and prototyped AWS Sagemaker Model Cards and Model Dashboard services
- Hosted and participated in explainability paper reading group sessions with Clarify science team

Amazon | *Software Engineer* | September 2020–2021

- Developed and maintained an Alexa-wide service to detect private data in the Alexa Secure AI Foundations org.
- Collaborated with science teams to deploy state-of-the-art NLP models detecting private data in text
- Implemented support for the Arabic language in service's ML models and production pipelines
- Participated in oncall rotations, triaging tickets, resolving availability issues, and improving operational excellence

Max Planck Institute for Software Systems | *Research Intern* | October 2019–August 2020

- Investigated mechanisms of incorporating fairness, diversity, and Responsible AI values in ML systems
- Compiled an extensive literature review on ethical interventions in ML research and projects
- Participated in the HUMAINT Winter school on Fairness, Accountability, and Transparency in AI
- *Advised by Krishna Gummadi and funded by the CBYX for Young Professionals Fellowship*

George Washington University | *Research Assistant* | September 2017–May 2019

- Trained a ResNet neural network to detect pro-Eating Disorder (pro-ED) images in online communities
- Wrote Python scripts to gather 100K training images from Tumblr and Twitter using pro-ED keywords
- Developed a dynamic webapp for ED clinicians to assess the pro-ED content of websites with classifier
- Built a Google Chrome extension using the classifier to detect and filter pro-ED media during browser sessions
- *Advised by Robert Pless, funded by a NSF Data MASTER Grant and GW Undergraduate Research Award*

Microsoft Research | *Research Intern* | Summer 2018

- Searched for finite groups amenable to embeddings for faster matrix multiplication algorithms
- Implemented the Triple and Quadruple Product Properties in GAP to identify optimal groups
- Designed and deployed parallel abstract-algebraic algorithms searching for groups on a multi-core server
- *Advised by Henry Cohn at Microsoft Research New England*

University of Maryland College Park | *Research Intern* | Summer 2017

- Co-designed a multi-armed bandit algorithm modeling cohort selection optimizing a submodular objective function
- Ran experiments with our algorithm on real graduate admissions data to select a diverse cohort of students
- Analyzed past admissions data to investigate the possibility of bias in previous decisions
- Co-designed a system using deep Reinforcement Learning to choose matching policies for dynamic kidney exchange
- *Advised by John P. Dickerson at the Combinatorics and Algorithms for Real Problems R.E.U. (10% acceptance rate)*

GW Learning Technologies Research Group | *Research Assistant* | May 2016–May 2017

- Fixed bugs in project webapp designed to help adults improve their literacy with NLG reading comprehension questions
- Wrote Python scripts to create and clean high-quality NLP training datasets from children's books with OCR
- Co-administered webapp usability studies and trainings with adult learners
- *Advised by Rahul Simha, funded by the GW SEAS Summer Undergraduate Program in Engineering Research*

Publications

Papers in refereed conference proceedings

1. Schumann, C., S. N. Counts, J. Foster, and J. P. Dickerson (2019). The Diverse Cohort Selection Problem. In: *International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*. AAMAS '19. Montréal, Québec. <https://ifaamas.org/Proceedings/aamas2019/pdfs/p601.pdf>.

Workshop papers

1. Counts, S. N., J.-L. Manning, and R. Pless (2018). Characterizing the Visual Social Media Environment of Eating Disorders. In: *Applied Imagery Pattern Recognition Workshop (AIPR)*. AIPR '18. Washington, DC. <https://doi.org/10.1109/AIPR.2018.8707400>.
2. Pless, R., R. Begtrup, L. Alkulaib, S. N. Counts, J. Harnett, J.-L. Manning, H. Xuan, and D. A. Broniatowski (2017). Recognizing Images of Eating Disorders in Social Media (Abstract). In: *Social Media Mining for Health Applications Workshop at Conference of the American Medical Informatics Association (AMIA)*. AMIA '17. Washington, DC. <https://ceur-ws.org/Vol-1996/paper7.pdf>.

Panels at academic conferences (presenter & co-organizer)

1. Henry, J., S. N. Counts, and K. Ukanwa (2021). Practical Challenges to Achieving Algorithmic Fairness in Industry (And What to do About Them). In: *Joint Statistical Meetings*. JSM '21. Virtual. <https://www2.amstat.org/meetings/jsm/2021/onlineprogram/AbstractDetails.cfm?abstractid=317359>.
2. Ladner, R. E., R. Ayanzadah, S. N. Counts, K. Krishnaswamy, and K. Wolfe (2018). 2018 Panel of Computing Students with Disabilities. In: *Proceedings of the 49th ACM Technical Symposium on Computer Science Education*. SIGCSE '18. Baltimore, Maryland, USA. <https://doi.org/10.1145/3159450.3159615>.

Honors

Fellowships and academic awards

2022	NSF CSGrad4US Fellow	National Science Foundation
2019	Congress-Bundestag Youth Exchange for Young Professionals Fellow	US Congress and German Bundestag
2019	Invitation to the Heidelberg Laureate Forum (declined due to CBYX)	Heidelberg Laureate Forum Scientific Committee
2019	NCWIT Collegiate Award, Honorable Mention	Natl. Center for Women in Information Tech.
2019	Marvin Green Prize	GW Department of Mathematics
2019	Fulbright Open Research Award to Germany Semifinalist	The Fulbright Commission
2018	Best Student Paper Presentation	IEEE Applied Imagery & Pattern Recog. Workshop
2018	TOMODACHI Kakehashi Inouye Scholar	TOMODACHI Initiative, US-Japan Council
2018	NCWIT Collegiate Award, Honorable Mention	Natl. Center for Women in Information Tech.
2017	Operating Systems Hall of Fame	GW Fall 2017 Operating Systems course

Research grants

2018	GW Undergraduate Research Award. "Multimodal Detection of Deviant Content Online". <i>Funding from the GW Office of the Vice President of Research.</i>	\$5000
2018	GW Data MASTER Fellowship. "Recognizing Images of Eating Disorders with Deep Learning". <i>Funding from the National Science Foundation.</i>	\$3000
2017	HackHarassment Grant. "A Research-based Hackathon to Combat Online Harassment". <i>Funding from Intel and the Born This Way Foundation.</i>	\$2000
2016	GW Summer Undergraduate Program in Engineering Research Fellowship. GW School of <i>Engineering and Applied Science.</i>	\$2000

Scholarships

2018	Google Lime Scholarship	Google
2018	Quip Diversity in Tech Scholarship, Runner Up	Quip
2017	AnitaB.org Grace Hopper Conference Scholar	AnitaB.org
2015-2019	Presidential Scholarship	George Washington University

Poetry awards

2018	Lannan Foundation Poetry Fellow	Folger Shakespeare Library, GW English Department
2018	Academy of American Poets Contest, Honorable Mention	GW English Department
2016	1 st Place, Citizen Day Poetry Contest	GW English Department

Research

Selected talks

- *It's Nothing Personal: Investigating Bias in the ImageNet Person Synset*, GW Bias in Artificial Intelligence course, Washington, May 2019.
- *Characterizing the Visual Social Media Environment of Eating Disorders*, Applied Imagery and Pattern Recognition Workshop, Washington, October 2018. **Best Student Paper Presentation**
- *The Diverse Cohort Selection Problem*, GW Chapter of the Association for Computing Machinery, Washington, February 2018.
- *Recognizing Images of Eating Disorders with Deep Learning*, GW Dean's Council of Women in Technology, Washington, January 2018.

Poster presentations

- *Deep Learning Tools for Eating Disorder Recovery*
 - GW Research Days, Washington, April 2019
- *Recognizing Images of Eating Disorders in Social Media*
 - GW Research Days, Washington, April 2018. **2nd Place for Best Engineering Poster**
 - GW SEAS R&D Showcase, Washington, February 2018. **Finalist for Best Undergraduate Poster (Theoretical)**
- *The Diverse Cohort Selection Problem*
 - GW SEAS R&D Showcase, Washington, February 2018. **Finalist for Best Undergraduate Poster (Theoretical)**
 - Aligned AI Workshop at NeurIPS-17, Long Beach, December 2017.

Teaching

Fall 2018	Introduction to Software Development	<i>Teaching Assistant</i>	George Washington University
Spring 2018	Discrete Structures II	<i>Learning Assistant</i>	George Washington University
Fall 2017	Introduction to Computer Science	<i>Learning Assistant</i>	George Washington University
Spring 2017	Algorithms and Data Structures	<i>Learning Assistant</i>	George Washington University
Fall 2016	Introduction to Computer Science	<i>Learning Assistant</i>	George Washington University
Summer 2015	8th Grade Chemistry	<i>Teaching Fellow</i>	Breakthrough Collaborative
Fall 2014	7th Grade Literature	<i>Teaching Fellow</i>	Breakthrough Collaborative
Summer 2014	8th Grade Chemistry	<i>Teaching Assistant</i>	Breakthrough Collaborative

Technical workshops authored & presented

2022	Datasheets, Model Cards, and System Cards Workshop (<i>in development</i>)	Amazon Machine Learning University
2017, 2018, 2019	Git, Command Line, and Linux Workshop	GW Association for Computing Machinery
2018	Have a Productive Programming Summer	GW Association for Computing Machinery

Languages and technology

Programming Languages: Python, Java, C, SQL, Bash, MATLAB, Scala, HTML, CSS, GAP

Software: Git, PyTorch, Spark, Mathematica, Django

Spoken Languages: German (B1), Spanish (B1), English (native)

Academic service

Service

2022	Co-Organizer and Program Committee Member	Responsible AI Workshop of the Amazon Machine Learning Conference
2022	ML Practitioner Focus Group Volunteer	Better Images of AI

Peer reviewing

2022	Reviewer	Amazon Research Awards: Fairness in AI Proposals
2022	Reviewer	Responsible AI Workshop of the Amazon Machine Learning Conference
2022	Reviewer	Amazon Machine Learning Conference
2021, 2022	Reviewer	Amazon Computer Vision Conference

Leadership

Leadership awards

- Baer Award for Individual Excellence in the GW Community*, GW Center for Student Engagement, 2019
- * Awarded to exceptional GW student(s) who have enhanced student life and the GW community
- Susan Shin Memorial Award*, GW School of Engineering and Applied Science, 2018
- * Awarded to a GW SEAS junior that exemplifies the dedication to service of the late Susan Shin

Leadership positions

2019-2020	US Junior Ambassador in Germany	United States Department of State
2017-2019	Academic Affairs Chair	GW Association for Computing Machinery
2016-2019	Mentor	GW SEAS Student Peer Advisory Network
2017-2018	Founder and Chair	GW Dean's Council of Women in Technology
2018	TOMODACHI Kakehashi Inouye Scholar	U.S.-Japan Council
2017	Co-organizer	Hackital (Hackathon)
2016-2017	President	GW Association for Computing Machinery
2015-2016	Freshman Representative	GW Association of Queer Women and Allies

Large-scale community events organized

2019	kc claffy: 10 Things You Need to Know About the Internet	Internet Distinguished Speaker Series, GW CS Dept.
2019	Vint Cerf: The Unfinished Internet	Internet Distinguished Speaker Series, GW CS Dept.
2018	Christine Darden: One of NASA's Hidden Figures	GW Dean's Council of Women in Tech
2017	Hackital: a Hackathon in the Nation's Capital	GW Association for Computing Machinery

Community speaking engagements

- *Storytelling as Empowerment: ECA Exchange Program Alumni Instagram Live*, U.S. Department of State Bureau of Educational and Cultural Affairs, Virtual, August 2022.
- *AiC Labs: Undergraduate Research from NCWIT's 2022 Collegiate Awardees* - Keynote speaker (representing Amazon), National Center for Women & Information Technology, Virtual, May 2022.
- *TOMODACHI KAKEHASHI Inouye Scholars Virtual Dialogue and Mixer* - Alumni Panel, Japan International Cooperation Center (JICE), Virtual, March 2022.
- *Never Too Early: Youth with Disabilities Abroad Webinar*, Mobility International USA (MIUSA), Virtual, March 2021.
- *2018 Panel of Computing Students with Disabilities* (with R.E. Ladner, R. Ayanzadah, K. Krishnaswami and K. Wolfe), SIGCSE Conference, Baltimore, February 2018.
Related blog post: samsaranc.github.io/sigcse.html
- *Creating Technological Solutions to Combat Online Harassment*, Hackital, Washington, November 2017.

Mentorship

2022	Software Engineer Intern Mentor	Amazon
2020-present	Alumni Mentor	GW Center for Women in Engineering
2016-2019	Mentor	GW SEAS Student Peer Advisory Network
2016-2019	Mentor	GW Women in Computer Science
2016	Camp Counselor	GW Cybersecurity Camp for Middle School Girls