Samsara Counts
Curriculum Vitae

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samsaranc

Education

2015-2019   George Washington University   B.S. in *Computer Science and Math*, Creative Writing minor
Overall GPA: 3.5/4.0 | Computer Science GPA: 3.6/4.0

Professional Experience

Amazon | *Data Scientist* | July 2022–Present

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

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

- Productionized state-of-the-art Machine Learning bias and explainability methods for Amazon Sagemaker Clarify
- Designed and prototyped responsible AI infrastructure in the SageMaker ecosystem
- Collaborated with Clarify scientists to improve Clarify service offerings

Amazon | *Software Engineer* | September 2020–2021

- Developed and maintained an Alexa-wide service to detect private data in the Alexa AI 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 model and production pipelines
- Participated in oncall rotations, triaging trouble tickets, resolving availability issues, and improving operational excellence

Research Experience

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

- Investigated mechanisms of incorporating fairness and diversity in Machine Learning algorithms
- Compiled an extensive literature review on ethical interventions in computer science research
- *Advised by Krishna Gummadi and funded by the CBYX for Young Professionals Fellowship*

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

- Used deep learning to recognize 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
- Built dynamic webapp for ED clinicians to assess the pro-ED content of websites with classifier
- Built Google Chrome Extension using classifier to detect and filter pro-ED media during browser sessions
- *Advised by Robert Pless*

Microsoft Research | *Research Intern* | Summer 2018

- Used group theory to speed up matrix multiplication by finding finite groups amenable to fast embeddings
- 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 texts 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*

Fellowships and academic awards

2022	CSGrad4US Fellowship	*National Science Foundation*
2019	Congress-Bundestag Youth Exchange for Young Professionals Fellow	*US Congress and German Bundestag*
2019	Invitation to the Heidelberg Laureaute Forum (declined)	*Heidelberg Laureaute 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 Appl. Imagery & Pattern Recognition 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*

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

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	1st Place, Citizen Day Poetry Contest	*GW English Department*

Grants

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

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)*. Montréal, Québec. `http://www.ifaamas.org/Proceedings/aamas2019/pdfs/p601.pdf`.

Workshop papers

1. 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)*. Washington, DC.

2. 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)*. Washington, DC.

Selected talks and panels

Research

➤ *Practical Challenges to Achieving Algorithmic Fairness in Industry (And What to do About Them)*, Joint Statistical Meetings (JSM 2021), Virtual, August 2021.

➤ *It's Nothing Personal: Investigting 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.

Community engagement and activism

➤ *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.

➤ *Creating Technological Solutions to Combat Online Harassment*, Hackital, Washington, November 2017.

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.
  • Women in Machine Learning (WiML) Workshop at NeurIPS-17, Long Beach, December 2017.

Teaching

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

Languages and technology

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

Software: Git, PyTorch, Spark, Mathematica, Django

Cloud Platforms: AWS

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

Coursework

Computer Science

Machine Learning, Bias in Artificial Intelligence, Computer Vision, Theory of Computing, Discrete Structures I & II, Continuous Algorithms, Algorithms and Data Structures, Operating Systems, Database Systems, Software Engineering

Math

Graph Theory, Real Analysis I & II, Abstract Algebra I & II, Probability, Computational Complexity Theory, Linear Algebra

Leadership

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

Technical workshops authored & presented

2022	Datasheets, Model Cards, and System Cards Workshop *(in development)*	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

Involvement and service

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

Academic Service

2022	Co-Organizer and Program Committee Member	Responsible AI Workshop of the Amazon Machine Learning Conference

Peer reviewing

2022	Reviewer	Amazon Research Awards Call for 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

Research training schools attended

2020	HUMAINT Winter School on Fairness, Accountability, and Transparency in AI	European Commission Joint Research Centre