

# Samsara Counts

## Curriculum Vitae

October 2019

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### Education

2015-2019	B.S.	George Washington University	Computer Science and Math, Creative Writing minor	GPA 3.5/4.0
2019-2020		Saarland University	Data Science and Artificial Intelligence	visiting M.S. student

### Research Experience

#### Max Planck Institute for Software Systems | *Research Intern* | October 2019–July 2020 (expected)

- Investigate mechanisms of incorporating fairness and diversity into Machine Learning algorithms
- *Advised by Krishna Gummadi*

#### George Washington University | *Researcher* | Fall 2017–May 2019

- Used deep learning to recognize images of Eating Disorders and build tools to improve patient health outcomes
- Incorporated geometric and combinatorial diversity into the training process to improve classifier accuracy
- *Advised by Robert Pless*

#### Microsoft Research | *Intern* | Summer 2018

- Used group theory to speed up matrix multiplication algorithms
- Solved an optimization problem over the search space of finite groups
- Implemented and designed abstract algebraic algorithms in GAP
- *Advised by Henry Cohn at Microsoft Research New England*

#### University of Maryland College Park | *Researcher* | Summer 2017

- Designed a multi-armed bandit algorithm to ensure diversity and fairness in an automated admissions process
- Analyzed past admissions data to investigate the possibility of bias in previous decisions
- 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. (7% acceptance rate)*

#### GW Learning Technologies Research Group | *Research Assistant* | August 2016–December 2017

- Used Natural Language Processing to generate reading comprehension questions from input passages
- Developed a mobile app and website using Play framework for adult learners to increase English literacy
- Adapted and improved reading comprehension question-generation algorithm in Java
- Identified high-quality datasets for training NLP algorithms and cleaned datasets using Python
- *Advised by Rahul Simha*

### Honors and awards

2019	CBYX for Young Professionals Fellowship in Germany	US Congress and German Bundestag
2019	Marvin Green Prize	GW Department of Mathematics
2019	NCWIT Collegiate Award, Honorable Mention	Natl. Center for Women in Information Technology
2019	Baer Award for Individual Excellence	GW Center for Student Engagement
2019	Fulbright Open Research Award to Germany Semifinalist	The Fulbright Commission
2018	Best Student Paper Presentation	Applied Imagery and Pattern Recognition Workshop
2018	Google Lime Scholarship	Google
2018	TOMODACHI Kakehashi Inouye Scholar	TOMODACHI Initiative, US-Japan Council
2018	NCWIT Collegiate Award, Honorable Mention	Natl. Center for Women in Information Technology
2018	Susan Shin Memorial Award	GW School of Engineering and Applied Science
2018	Quip Diversity in Tech Scholarship, Runner Up	Quip
2018	Lannan Foundation Poetry Fellow	Folger Shakespeare Library
2018	Academy of American Poets Contest, Honorable Mention	GW English Department
2017	AnitaB.org Grace Hopper Conference Scholar	AnitaB.org
2016	Summer Undergraduate Program in Engineering Research	GW School of Engineering and Applied Science
2016	1 <sup>st</sup> Place, Citizen Day Poetry Contest	GW English Department

## Grants

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|------|--|--------|
| 2019 | CRA Distributed Research Experiences for Undergraduate Award (declined). "Deep Learning Tools for Eating Disorder Recovery". <i>Funding from the Computing Research Association and the National Science Foundation.</i> | \$7000 |
| 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 |

## 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. <https://arxiv.org/abs/1709.03441>.

### 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

- *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**
- *2018 Panel of Computing Students with Disabilities* (with R.E. Ladner, R. Ayanzadah, K. Krishnaswami and K. Wolfe), SIGCSE Conference, Baltimore, February 2018.
- *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.
- *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. **2<sup>nd</sup> 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 NIPS-17, Long Beach, December 2017.
  - Women in Machine Learning (WiML) Workshop at NIPS-17, Long Beach, December 2017.

## Teaching

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

## Languages and technology

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

**Software:** Git, PyTorch, Mathematica, Django

**Spoken Languages:** Spanish (C1), German (B1), English (native)

## Involvement and service

2019-2020	US Junior Ambassador in Germany	United States Department of State
2016-2019	Academic Affairs Chair	GW Association for Computing Machinery
2016-2019	Mentor	SEAS Student Peer Advisory Network
2016-2019	Mentor	GW Women in Computer Science
2017-2018	Founder and Chair	GW Dean's Council of Women in Technology
2017-2018	Organizer	Hackital
2016	Camp Counselor	GW Cybersecurity Camp for Middle School Girls
2015-2016	Freshman Representative	The Association of Queer Women and Allies

## Technical workshops

2017-2019	Git, Command Line, and Linux Workshop	GW Association for Computing Machinery
2018	Have a Productive Programming Summer	GW Association for Computing Machinery

## Large-scale community events organized

2019	kc claffy: 10 Things You Need to Know About the Internet	Internet Distinguished Speaker Series, GW Dept. of Computer Science
2019	Vint Cerf: The Unfinished Internet	Internet Distinguished Speaker Series, GW Dept. of Computer Science
2018	Christine Darden: One of NASA's Hidden Figures	GW Black History Month, GW Dean's Council of Women in Technology
2017	Hackital	GW Association for Computing Machinery