

# Samsara Counts

## Curriculum Vitae

February 2019

📍 Washington, DC  
🏠 [samsaranc.github.io](https://samsaranc.github.io)  
☎ +1 817 994 9732  
✉ [samsaranc@gmail.com](mailto:samsaranc@gmail.com)  
🌐 [samsaranc](https://samsaranc.github.io)

### Education

2019 B.Sc. George Washington University *Computer Science and Mathematics*, Minor in Creative Writing

### Research Experience

#### George Washington University | *Researcher* | Fall 2017–Present

- Use deep learning to recognize images of Eating Disorders and build tools to improve patient health outcomes
- Incorporate 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 and R

### Honors and awards

2018	Best Student Paper Presentation	<i>Applied Imagery and Pattern Recognition Workshop</i>
2018	Google Lime Scholarship	<i>Google</i>
2018	TOMODACHI Kakehashi Inouye Scholar	<i>TOMODACHI Initiative, US-Japan Council</i>
2018	NCWIT Collegiate Award, Honorable Mention	<i>Natl. Center for Women in Information Technology</i>
2018	Susan Shin Memorial Award	<i>GW School of Engineering and Applied Science</i>
2018	Quip Diversity in Tech Scholarship, Runner Up	<i>Quip</i>
2018	Academy of American Poets Contest, Honorable Mention	<i>GW English Department</i>
2017	AnitaB.org Grace Hopper Conference Scholar	<i>AnitaB.org</i>
2016	Summer Undergraduate Program in Engineering Research	<i>GW School of Engineering and Applied Science</i>
2016	1 <sup>st</sup> Place, Citizen Day Poetry Contest	<i>GW English Department</i>

### 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

## 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.

### Talks

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

### Poster presentations

- *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)**

### Teaching

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

### Languages & technology

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

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

**Spoken Languages:** Spanish (proficient), English (native)

## Involvement and service

- 2016-Present Academic Affairs Chair GW Association for Computing Machinery
- 2016-Present Mentor SEAS Student Peer Advisory Network
- 2016-Present Mentor GW Women in Computer Science
- 2017-2018 Founder and Chair GW Dean's Council of Women in Technology
- 2017-2018 Organizer Hackital
- 2015-2016 Freshman Representative The Association of Queer Women and Allies

## Technical workshops

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

## Large-scale events organized

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|------|--|---|
| 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                              |