

# Samsara Counts

## Curriculum Vitae

March 2019

📍 Washington, DC  
🏠 [samsaranc.github.io](https://samsaranc.github.io)  
✉ [samsaranc@gmail.com](mailto:samsaranc@gmail.com)  
🐙 [samsaranc](https://github.com/samsaranc)

### 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

|  |  |
|--|--|
| 2019 Marvin Green Prize                                    | GW Department of Mathematics                     |
| 2019 NCWIT Collegiate Award, Honorable Mention             | Natl. Center for Women in Information Technology |
| 2019 Fulbright Open Research Award to Germany Semifinalist | The Fulbright Commission                         |
| 2019 CBYX for Young Professionals Germany Fellowship       | Congress-Bundestag Youth Exchange                |
| 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

- |      |  |        |
|------|--|--------|
| 2018 | GW Undergraduate Research Award. "Multimodal Detection of Deviant Content Online".<br><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".<br><i>Funding from the National Science Foundation.</i>            | \$3000 |
| 2017 | HackHarassment Grant. "A Research-based Hackathon to Combat Online Harassment".<br><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 and panels

- *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

- *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 | 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                                      |
| 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 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                              |