Izzy Chaiken

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Education:

University of Washington, Seattle, WA   *September 2023 − Present*
Ph.D. in Information Science
Prospective Advisors: Aylin Caliskan, Lucy Lu Wang

Swarthmore College, Swarthmore, PA   *August 2016 − May 2020*
B.A, Mathematics and Computer Science (Double Major)
Graduation: May 2020
Elected Phi Beta Kappa

Awards and Honors:

- **NSF CSGrad4US Fellowship** — Fellowship is awarded to support individuals who demonstrate potential to become successful Computer and Information Science researchers. As a fellow, I will have three years of funding while pursuing my PhD studies, equivalent to the NSF GRFP.
- **Eugene Lang Summer Research Grant** — Award funding 12 week summer undergraduate research work at Swarthmore College. Awarded to fund my research developing computer vision models to automate toxicology research.
- **Phi Beta Kappa** — Awarded to the top 10 percent of each graduating class at Swarthmore.

Publication:

- Ireland, D., Bochenek, V., **Chaiken, I*.**, Rabeler, C., Onoe, S., Soni, A., & Collins, E. M. S. (2020). Dugesia japonica is the best suited of three planarian species for high-throughput toxicology screening. *Chemosphere*, *253*, 126718.

Research and Work Experience:

Sambanova Systems   *February 2022 − July 2023*
Software Engineer
- As a member of the Machine Learning Deployment Team, I integrate models including GPT-based language models and HuBERT-based speech models into a customer-facing API
- Ensure models produce correct metrics, perform well on sample inputs, and produce outputs in expected timeframe
- Write documentation describing model usage

Institute For Defense Analyses   *June 2020 − February 2022*
Research Associate
- Applied population genomics estimators to determine the population size of SARS-CoV-2 and developed a simulator to examine the effects of biased viral sequence samples. I am currently working with IDA researchers to prepare a paper based on this research for publication.
- Wrote report on potential applications for the information-theoretic measure of transfer entropy, with example use cases of Covid-19 transmission and simulated supply chains

- Created proof of concept for messaging protocol

Eva-Maria Collins Lab *May 2019 – May 2020*
Machine Learning Research Assistant
- Developed models in Python to classify videos and images of flatworms. Used Scikit-Image and OpenCV to create rules-based models to detect whether worms were stuck in place in videos of them being shaken
    - A description of these models is published in the paper: ["Dugesia japonica is the best suited of three planarian species for high-throughput toxicology screening"](#)
- Trained convolutional neural networks to determine whether imaged flatworms had reproduced, died, or done neither. The resulting neural networks were achieved high precision and recall despite extreme class imbalances and variation in lighting conditions correlated with the outcome variable

System1 Biosciences *May 2018 – August 2018*
Software Engineering Intern
- Designed and maintained features of pipeline for automated image capture, storage, and analysis in Python, designed data display interfaces in ReactJS

Swarthmore College *January 2018 –May 2020*
Teaching Assistant, Computer Science and Statistics Departments
- Assisted professors in labs and led weekly sessions to help students complete assignments for Intro to CS and Data Structures and Algorithms classes.
- Explained statistical concepts and helped students complete statistical programming assignments

Stanford Center for Education Policy Analysis (CEPA) *May 2017 – August 2017*
Research Assistant
- Worked on CEPA projects to quantify effects of education policy by assembling datasets, automating mathematical calculations, and conducting a literature review

Languages and Frameworks:
Python (NumPy, Matplotlib, scikit-image, Keras, TensorFlow), Javascript (ReactJS), Java, C++, SQL, Git, Bash, OCaml, Rust