SHAILEN SMITH

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EDUCATION

Dartmouth Guarini School of Graduate Studies, Hanover, New Hampshire *Fall 2024 – Spring 2029*
Computer Science PhD Student
Advised by Adam Breuer
Relevant Coursework: Information Theory (CS237), Machine Learning (CS274)

Stony Brook University, Stony Brook, New York *Class of 2024*
Honors College; B.S. Mathematics; Minor, Computer Science; Minor, Spanish Language and Literature
GPA: **3.92**/4, summa cum laude
Full Tuition Provostial Merit Scholarship (2020-2024); National Merit Scholarship (2020-2024)
Relevant Coursework: Adv. Linear Algebra (MAT315), Adv. Abstract Algebra I-II (MAT313+314), Real Analysis (MAT320+322)

Fairfield Ludlowe High School, Fairfield, Connecticut *Class of 2020*
GPA: 3.95/4, *Salutatorian*

RESEARCH

Deep Learning Privacy Project, Breuer Lab, Dartmouth College *ongoing*
- Creating provable privacy guarantees against data reconstruction attacks for image classification and diffusion models
- Advised by Adam Breuer, funded by OpenAI's Cybersecurity Grant Program

Human Language Analysis Beings Lab, Stony Brook University *Fall 2023 – Spring 2024*
- Built a human-aware autoencoder LLM using Hugging Face and PyTorch under Prof. H. Andrew Schwartz
- Wrote senior thesis: "Autoencoder Human Language Modeling" and presented Honors College Symposium poster

Learning Sciences & Technologies NSF REU (Grant ID 1950683)**,** Worcester Polytechnic Institute *Summer 2023*
- Processed a large student dataset and trained a Bayesian Knowledge Tracing (BKT) model using SQL, Pandas, and scikit-learn
- Developed API to implement BKT model into the ASSISTments tutoring platform for widespread use by schools and researchers

Directed Reading Program in Math, Stony Brook University *Spring 2023*
- Studied and implemented feedforward neural networks and Transformers in PyTorch under guidance of a graduate mentor

Data Science NSF REU (Grant ID 1852498**),** Worcester Polytechnic Institute *Summer 2022*
- Researched the effect of inferred gender information on fair AI ranking algorithms
- Published: A. Pietrick, A. Romportl, **S. Smith**, O. Olulana, K. Cachel and E. Rundensteiner, "Are Fair Learning To Rank Models Really Fair? An Analysis Using Inferred Gender," IEEE MIT Undergrad Research Tech Conf (URTC), 2022, pp.1-5.

Directed Reading Program in Math, Stony Brook University *Spring 2022*
- Studied category theory and algebraic geometry under guidance of a graduate mentor

TEACHING

Graduate Teaching Assistant, Department of Computer Science, Dartmouth College *Fall 2024*
- Manage a team of 16 undergraduate section leaders for Dartmouth's intensive OOP course of 90+ students

Lead Tutor, Academic Success and Tutoring Center, Stony Brook University *Spring 2021 – Spring 2024*
- Mentored 15 tutors with regular written evaluations, constructive training feedback, and community engagement initiatives
- Tutored and prepared undergraduate students for self-regulated learning in calculus, linear algebra, and differential equations

Assistant Center Director, Mathnasium of Fairfield *8/2018 – 1/2023*
- Managed and taught individualized math curricula for K-12 students in collaboration with a team of fellow instructors
- Trained fellow instructors in the Mathnasium@Home teaching platform to facilitate virtual transition in Spring 2020

Teaching Assistant, AwesomeMath Summer Program *Summer 2021*
- Graded classwork with detailed feedback, led problem sessions, and monitored engagement in online number theory course

COMMUNITY

Treasurer, Stony Brook Environmental Club, Stony Brook University *Fall 2022 – Spring 2024*
- Oversaw use of $3.3k budget with G-Suite and wrote club grant applications for sustainability-focused events

President, Toscanini Hall Council, Stony Brook University *Fall 2021 – Spring 2022*
- Led a team of 15 students to plan community events for Toscanini Hall, one of the most engaged dorms on campus
- Recognized as *Outstanding Executive Board Member of the Year* out of 300+ SBU hall council members

SKILLS AND INTERESTS

- Deep Learning: Transformers, Diffusion Models, RNNs, CNNs, code with Python (Hugging Face, PyTorch, Pandas)
- Mathematics: Vector Spaces, Information Theory, Algorithm Complexity Analysis, Galois Theory, Manifolds
- Teaching: CRLA Level III Certified Tutor (E-learning, accessibility, diversity, tutor management, etc.)
- Spanish: Professional working proficiency, completion of undergraduate minor
- Learner, communicator, team leader, creative problem solver, educator

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REFERENCES

Dr. Adam Breuer, Dartmouth College
Assistant Professor, Department of Computer Science
Assistant Professor, Department of Government
Co-Principal Investigator, Dartmouth Cybersecurity Research Cluster
Dr. Breuer is my PhD faculty advisor and PI on my active research projects.

Dr. H. Andrew Schwartz, Stony Brook University
Professor, Department of Computer Science
Director, Human Language Analysis Lab (HLAB)
Principal Investigator, World Well-Being Project
has@cs.stonybrook.edu
631-632-2459
Dr. Schwartz was my faculty mentor for my senior thesis NLP project with the HLAB.

Dr. Neil T. Heffernan, Worcester Polytechnic Institute
Director, Learning Sciences and Technologies (LS&T) Program
Co-Founder, The ASSISTments Foundation
nth@wpi.edu
(508) 831-5000 x5569
Dr. Heffernan was my faculty mentor during my time at the WPI LS&T REU in Summer 2023.