Shon Shtern

ss7007@columbia.edu | New York, NY
Github | Personal Website

EDUCATION

Columbia University	Expected Graduation: Fall 2025
Master of Science in Computer Science; Thesis/Machine Learning Track (GPA 3.93)	New York, New York

Relevant Coursework: Machine Learning, Computer Vision II, Natural Language Processing, Quantum Computing, Systems Programming.

University of Illinois at Urbana-Champaign	August 2017 - December 2021
Bachelor of Science in Engineering Physics and Mathematics (GPA 3.92)	Champaign, Illinois

Relevant Coursework: Database Systems, Algorithms, Data Structures, Nonlinear Programming, Honors Real Analysis.

Honors and Awards: Amazon MS Fellow, DREAM Fellow, Cum Laude in Mathematics with Highest Distinction; Highest Honors in Physics; James Scholar; Chancellor's Scholar.

PROFESSIONAL EXPERIENCE

The GILM Lab	New York, New York
Research Assistant	January 2024 - Present

- Developed a **Pytorch**-based **Neural Network** to assess **3800**+ materials' complex reflectance properties, enhancing light absorption modeling accuracy by **20%**.
- Coauthored two **Mitsuba rendering pipelines** using **C++** to measure fluorescence in objects of varying thickness, enhancing accuracy by **10%**.

The Process, Interaction, and Computing Lab	Champaign, Illinois
Research Fellow Intern	June 2023 - December 2023

- Created a visualization tool to analyze **5 million** syntax errors with **Python and SQL**, achieving **95% precision** in error detection and evaluation.
- Discovered indicators of logic errors within coding assessments using **Matplotlib and SciPy**, finding an increase of **10 edits per compilation**.

Illinois Geometry Lab	Champaign, Illinois
Research Assistant	January 2020 - May 2020

- Co-developed a **Python** algorithm to calculate the basis of an unexplored mathematical structure and graph its modules.
- Presented findings on the modular nature of Steenrod Algebras to 30 researchers in the Mathematics Department to prepare for further work in higher-order algebras.

PROJECTS

Does Music Taste Indicate Happiness? 2024
- Worked on a team to develop **neural network** models using **Scikit-Learn**, **Pandas**, and **TensorFlow** to measure the relationship between music taste and mental health levels, achieving an F1 score of .65.

Find Your Dream City, DevFest 2024
- Collaborated with a team to develop a **KNN** and **linear regression** algorithm using **Python, Scikit-Learn, HTML,** and **FLASK** to recommend the top 3 cities for the users based on preferences.

Sao Paulo Public Transportation App 2023
- Designed a Sao Paulo public transportation app using **SQL, JavaScript** and **HTML**, enhancing user navigation by displaying the quickest routes**.**
- Incorporated a badge system for frequent app usage, allowing users to earn and display up to 10 badges.

Database Lookup Chat Server 2023
- Constructed a **TCP** database web server in **C** utilizing the **socket, netinet**, and **arpa/inet** libraries.
- Implemented functionality to allow clients to search for and receive information from the database.

LEADERSHIP

- **Girls who Code Facilitator 2022-2023:** Hosted workshops for 34 elementary, middle and high school girls, teaching **data structures** and **OOP** in **Java**. Mentored 20 girls to create **Java/Python** programming projects.
- **Illinois Smash Bros. Competitor:** Managed finances to ensure the club hosts two large events yearly, attracting national competition. Ranked **best player in the university, top 5 in the state of Illinois** and **top 15 in NYC**.
- **UIUC Chess Ethics Chair:** Hosted educational events and played in national tournaments. **Peak USCF 1809.**

TECHNICAL SKILLS

Programming Languages: Python, C, C++, MySQL, Java, JavaScript, HTML, CSS, MIPS.
Technologies: AWS, Google Cloud. React, Node.js, Firebase, Vim, Git, Bash, Linux, Microsoft Suite, Adobe Suite.
Frameworks/Libraries: PyTorch, Pandas, Scikit-Learn, TensorFlow, MaterialUI, Mitsuba, FLASK, NumPy.