Sharvaa Selvan

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EDUCATION

Massachusetts Institute of Technology **Class of 2026**

B.S. in Computer Science and Mathematics GPA: 5.0/5.0

Relevant Coursework: Advanced Algorithms, Probability and Random Variables, Machine Learning, Machine Learning for Molecule Discovery, Fundamentals of Programming, Linear Algebra, C and Assembly, Differential Equations

Programming Languages: Python (incl. PyTorch, TensorFlow, NumPy, Pandas, sklearn, RDKit), Java, C, Assembly, LaTeX

EXPERIENCE & LEADERSHIP

Ultimate Kronos Group - *AI/Software Engineering Intern* **May '24 - Aug '24**

- Overhauled **sentiment analysis models** for Employee Voice product and **improved accuracy** by **30%**.
- **Deploying models** into production using **Docker** and **Kubeflow Pipelines**.

Traders@MIT- *Executive Board* **Sep '23 - Present**

- **Lead MIT's** premier undergraduate **quantitative finance club**.
- Host annual intercollegiate trading competition with **100+ competitors**, partnering with leading industry sponsors.

MIT CS and AI Laboratory - *Undergraduate Researcher* **Oct '23 - Present**

- Co-authored **spotlight paper at International Conference for Machine Learning** (ICML). **3.5% Acceptance Rate**.
- Researching Large Language Models and their capabilities to generate innovative molecules.

KLOOPS Inc. *501(c)(3) - Co-Founder* **Sep '22 - Present**

- Dedicated to empowering children globally and creating **inclusive educational opportunities** through technology.
- **Raised $5k** and implemented **learning curriculum and digital kits in 9 rural schools across India.**

PROJECTS & PUBLICATIONS

Representing Molecules as Random Walks Over Interpretable Grammars [ICML 2024 Spotlight Paper]

- Proposed **data-efficient and interpretable** model for **molecule generation.**
- Demonstrated **14% greater synthesizability** and superior performance of **2,000+ novel molecules**.

University of Chicago Trading Competition | *Python, NumPy, Pandas, SciPy*

- Competed in **live trading and portfolio allocation** cases competitions.
- **Programmed Python trading bot** which trades five stocks and two ETFs on live exchange.

Deep Learning for Drug Design | *Python, TensorFlow, NumPy, AutoDock, AlphaFold*

- **Developed Recurrent Neural Network** to generate potential treatments for Chronic Obstructive Pulmonary Disease.
- Optimized traits using a **nondominated sorting algorithm**. Simulated properties of **20,000+ generated molecules**.

Sleepy.py | *Python, JavaScript, Flask, React, Roboflow, OpenCV*

- Designed AI-powered software that **analyzes live footage to track sleep analytics** and autonomously alarm the user.
- Utilized Flask, React, and Roboflow to produce a **fully functioning frontend and backend**.

HONORS

National Math and Science Competitions

- **USA Mathematical Olympiad Qualifier, 5-Time AIME Qualifier, AMC10 Perfect Score**
- **USA Chemistry Olympiad 3-Time National Finalist, National Top 150, Regional Champion**
- **Princeton University Mathematics Competition - 7th Place**
- **43rd Annual MIT Integration Bee - 6th Place**

Coca-Cola Scholar

- **$20,000 Academic Scholarship** for excellence in leadership, service, and academics
- **Top 150 out of 93,000** applicants