Samuel Tian

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Education

Massachusetts Institute of Technology Cambridge, MA
Prospective Major: Computer Science and Engineering Aug 2021 - May 2025 (expected)

- Relevant Coursework: Introduction to Algorithms, Fundamentals of Programming, Introduction to Machine Learning, Formal Reasoning About Programs, Introduction to Linguistics, Differential Equations
- Expected Coursework during Fall 2022: Quantitative Methods for Natural Language Processing, Computation Structures, Linear Algebra, Introduction to Probability

Liberal Arts and Science Academy Austin, TX
High School Diploma Aug 2017 - May 2021

- Relevant coursework: AP Computer Science, Advanced Computer Science, Digital Electronics, Web and Mobile Applications, AP Statistics, Linear Algebra, Multivariable Calculus, Number Theory

Experience

Distributed Robotics Laboratory | MIT CSAIL Cambridge, MA
Undergraduate Researcher, supervised by Lianhao Yin Jun 2022 - present

- Utilized reinforcement learning to assist surgeons performing laparoscopic cholecystectomy
- Created simulation environment in IsaacGym and attached RlLib training agents to form the RL pipeline

Programming Languages and Verification Group | MIT CSAIL Cambridge, MA
Undergraduate Researcher, supervised by Adam Chlipala, Andres Erbsen Jan 2022 - present

- Implemented a new modular reduction algorithm used by Curve25519 and other elliptic curves
- Proved functional correctness of algorithm for integration into the fiat-crypto library

Artificial Intelligence in Threat Detection Systems San Marcos, TX
High School Researcher, supervised by Dan Tamir Jun 2020 - Mar 2021

- Used Hidden Markov Models to detect suspicious behaviors in maritime vehicles based on their trajectories
- Presented research at the 2021 Industry Engineering & Management Systems conference

Novel Data Compression Algorithms San Marcos, TX
High School Researcher, supervised by Dan Tamir Jun 2019 - Feb 2020

- Improved SFE coding to outperform leading compression rates for certain unbounded integer distributions
- Presented research at Austin Energy Regional Science Fair

Skills

- Languages: C++, Python, Java, Coq
- Hardware: Windows, Linux (Ubuntu 20.04), MacOS
- Tools: Git, Vim, Emacs, ML frameworks (Keras & Tensorflow, Pytorch, RLlib, IsaacGym)