Alek Westover
(617) 893-2894 • alekw@mit.edu • awestover.github.io

Education

Massachusetts Institute of Technology, Cambridge, MA 2022-2026
Candidate for Bachelor's Degree in Mathematics with Computer Science
Coursework:
Reinforcement Learning, Natural Language Processing
Discrete Probability and Stochastic Processes, Advanced Algorithms, Geometric Algorithms, Algorithmic Lower Bounds
Graph theory and Additive Combinatorics, Cryptography, Analysis of Boolean Functions, Number Theory
Linear Algebra, Abstract Algebra, Multivariable Calculus, Real Analysis, Differential Equations

Publications *(Note: In theoretical computer science, it is customary to sort the authors of each paper alphabetically.)*

- Martin Farach-Colton, William Kuszmaul, Nathan S. Sheffield, and Alek Westover. "A Nearly Quadratic Improvement for Memory Reallocation." (SPAA '24).
- William Kuszmaul and Alek Westover. "Scheduling Jobs with Work-Inefficient Parallel Solutions". (SPAA '24)
- William Kuszmaul and Alek Westover. "The Variable-Processor Cup Game". (ITCS '21)
- William Kuszmaul and Alek Westover. "Cache-Efficient Parallel-Partition Algorithms using Exclusive-Read-and-Write Memory." (SPAA '20).

Skills

Data science, statistics and machine learning (Python, Julia); Full-stack web development (javascript, Flask / Node.js); C++; Systems engineering (Rust); English (native); Mandarin (fluent).

Experiences

MIT Summer Program in Undergraduate Research (Mentor: Kai Zheng) 2024 summer
Received the "Hartley Rogers Jr. Prize" for developing a novel affinity property tester.
Software Engineer Intern at Neon Databases (Serverless PostgreSQL startup) 2023 summer
Systems engineering in Rust: added support for custom Postgres extensions.
MIT UROP (Mentors: Virginia Williams, William Kuszmaul) 2022-2024
Designed and analyzed algorithms and data structures.
Software Engineer Intern at Beacon Biosignals (Healthcare AI startup) 2019-2020
Worked in Julia to prepare large datasets for use in machine learning models (data wrangling).
MIT PRIMES (Mentor: William Kuszmaul) 2019-2020
Canada/USA Mathcamp 2019
Regeneron Science Talent Search 2020
National science fair for high school students, 7th place in USA, $70,000 prize.
Massachusetts Science Engineering Fair: Second Place Award 2020
Private Tutor (self-employed) 2017-present
Teach math (e.g., calculus) and programming (e.g., python) to high schoolers and adults.