

Arvid Lunnemark

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EDUCATION

Massachusetts Institute of Technology

Cambridge, MA

Candidate for Bachelor of Science in Mathematics (18) and Computer Science (6-3)

September 2018 – May 2022

- **GPA:** 5.0/5.0
- **Selected Coursework:** Algorithms (6.854, 6.890, 6.046), Theory of Computation (18.404), Systems (6.004, 6.033, 6.824), Performance (6.172), Software (6.031), Probability & Inference (18.600, 6.036, 6.437), Differential Equations (18.303), Algebra (18.701), Real Analysis (18.100Q), Political Science (17.01, 17.03).

WORK

Jane Street

New York, NY

Quantitative Trading Intern

June 2021 – August 2021

- Used Python and Excel to build a model to explain option prices under certain conditions.
- Learned about finance and trading.

Stripe

Remote

Software Engineering Intern

May 2020 – August 2020

- Created a dashboard for engineering teams to monitor their tests, highlighting slow and flaky ones. Used React for the frontend, Ruby for the backend, and Redis for storing and querying the data.

QuantCo

Cologne, Germany

Software Engineering Intern

June 2019 – August 2019

- Wrote performance tests for a Go and Gunicorn server to analyze unexplained timeouts. The work resulted in a model of the optimal server configuration as a function of server load, and was incorporated into production.
- Devised and implemented an algorithm for grouping health claims more cost-effectively, modeling the problem as an instance of MinCostSAT.

RESEARCH

Massachusetts Institute of Technology

Cambridge, MA

- **Supertech Group** (*Spring 2021*): Added support for ForRange loops in the OpenCilk compiler for parallel C++ code, under the supervision of Dr. Tao B. Schardl (github.com/arvid220u/opencilk-project).
- **Dr. Michael Sipser** (*Spring 2020*): Proved that cooperation is necessary for evolutionary stability in the iterated prisoner's dilemma (github.com/arvid220u/prisonersdilemma).
- **Dr. Kyle Keane** (*Spring 2019*): Created a Python package for converting spoken math formulas into LaTeX (saytex.xyz).

AWARDS

International Mathematical Olympiad. Gold Medal 2018, Bronze Medal 2017.

International Olympiad in Informatics. Silver Medal 2017.

LEADERSHIP

MIT Battlecode

Cambridge, MA

Co-President

August 2019 – March 2020

- Led the tech operations of MIT's longest-running programming competition, which attracts thousands of competitors globally and awards sponsor-funded prizes totaling \$30,000 (battlecode.org).

PROJECTS

iOS Apps

2015 – 2018

- **Speedafari:** Utility to speed up web browsing by blocking ads and scripts. 100,000 downloads, out of which 4,000 were paid. Well-received in the reputable blogs MacStories and Lifehacker (apps.apple.com/app/id1030762703).
- **Simple Counter:** Tally counter with a focus on simple, adaptive design. 30,000 downloads, out of which 1,000 were paid. Rated 4.9/5.0 stars by users (apps.apple.com/app/id993429927).

SKILLS

Programming Languages. Python, Java, Go, Swift, JavaScript, C++, Dart, Bash.

Technologies. React, Django, Flask, HTML, CSS (web); Numpy, Pandas, SQL, Excel (data analysis); iOS SDK, Flutter (mobile); Kubernetes, Docker, Google Cloud, Redis (infrastructure); Git.

Spoken Languages. Fluent in English and Swedish. Limited proficiency in French and Russian.