David Lee

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Education

- **Massachusetts Institute of Technology (Cambridge, MA)** *Aug 2023 - Jun 2026*
  - Bachelor of Science in Electrical Engineering and Computer Science, Cumulative GPA: 5.0/5.0
  - Relevant Coursework: Inference and Information, Digital Systems Lab, Introduction to Machine Learning, Design and Analysis of Algorithms, Computer Systems Engineering, Dynamical System Modeling and Control Design, Programming in C and Assembly, Computation Structures, Linear Algebra and Optimization

Experience

- **Jane Street Capital: Quantitative Research Intern** *May 2025 - Aug 2025*
- **MIT Physics: Undergraduate Researcher** *Feb 2025 - Present*
  - Undergraduate researcher in the MIT Physics Department, researching the use of neural networks, transformers, and sparse attention in condensed matter physics.
- **MIT Computer Science and Artificial Intelligence Lab (CSAIL): Undergraduate Researcher** *Sep 2024 - Present*
  - Undergraduate researcher in the CLEAR lab, researching multimodal interventions in semi-autonomous driving.
  - Developing algorithms to integrate natural language feedback and direct human control with autonomous driving systems.
- **Myko AI: Machine Learning Engineer** *Jun 2024 - Sep 2024 (Full-time), Sep 2024 - Feb 2024 (Part-time)*
  - Core developer and creator of Myko AI's Virtual Assistant, a highly powerful and accurate chatbot.
  - Worked with LLMs and function calling, and external data enrichment APIs. Wrote 20,000+ lines of Python code to develop custom agent frameworks, deployed on an Azure function app.

Projects

- **FJML**: Website: dlee888.github.io/FJML Code: github.com/dlee888/FJML
  - Wrote 3500 lines of performant C++ and CUDA code from scratch to implement a machine learning library.
  - Wrote comprehensive documentation and 1000+ lines of tests using Catch2.
  - Set up continuous integration to run tests, build docs, and generate code coverage reports.
- **MIT Pokerbots**:
  - Wrote 2100 lines of performant C++ code to play the variant of Auction Hold'em for MIT Pokerbots.
  - Awarded 2nd place C++ team in the MIT Pokerbots Tournament 2024.
- **Lynbrook ProCo**: Helped organize a coding competition hosted by my high school's CS club.
  - Wrote challenging algorithmic problems for competitors.
  - Created a backend API using FastAPI which was deployed to AWS. The API graded hundreds of code submissions in real time during the contest. github.com/dlee888/lhsproco_grader
- **Chess Bot**: github.com/dlee888/Chess_Bot
  - Wrote a chess engine with 3000 lines of performant C++ code from scratch that implemented alpha beta pruning.
  - Wrote a discord bot wrapper with 2500 lines of Python code that allows people to play the engine or other users. The bot has been added to 25,000 discord servers and more than 100,000 games have been played using the bot.
  - Deployed the bot on a server using AWS and MongoDB for data storage.

Awards

- **William Lowell Putnam Mathematical Competition Top 200** *Feb 2024*
  - Rank 135 in the 84th William Lowell Putnam Mathematical Competition with a score of 44.
- **International Olympiad on Astronomy and Astrophysics Gold Medalist** *Aug 2023*
  - Represented the US at the International Olympiad on Astronomy and Astrophysics (one of 5 team members).
  - Ranked 12th place in the world (7th place in the world on the theory exam) and awarded a Gold Medal.
- **USA Computing Olympiad Finalist** *May 2023*
  - Invited as one of 22 finalists to attend the USA Computing Olympiad 2023 training camp.
  - USACO Platinum contestant since January 2022. High score of 675, rank 63 among all precollege participants.
- **USA Physics Olympiad** *Apr 2021 - Apr 2023*
  - Invited to the USA Physics Olympiad Training Camp in 2021 and 2022. Awarded a Gold Medal on the USA Physics Olympiad in 2022 and 2023.
- **USA Math Olympiad Bronze Medalist** *Mar 2023*
  - Highest USAMO/USAJMO index of 260.5
  - Awarded a Bronze Medal on the USA Math Olympiad with a score of 27.

Programming Skills

- **Languages**: Fluent in: C, C++, Python, Java, LaTeX. Experience with: Rust, RISC-V assembly, CUDA, Julia, SystemVerilog, SQL, Javascript, HTML/CSS
- **Libraries**: PyTorch, TensorFlow, Numpy, Matplotlib, Catch2, Flask, FastAPI, Pandas, OpenAI, Anthropic, and more
- **Technologies**: Linux, Git, Github, MongoDB, AWS, Docker, Neovim, VS code