

# JASPER LEE

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## EDUCATION

**The University of Illinois Urbana-Champaign**, Urbana, IL

*PhD in Computer Science*

May 2030

GPA: N/A

**The University of Texas at Austin**, Austin, TX

*BS in Computer Science, Turing Scholars Honors Program*

May 2025

*BS in Mathematics*

GPA: 3.98/4.00

## RESEARCH EXPERIENCE

**Formally Certified Automation and Learning Lab**, Urbana, IL (Advisor: **Prof. Gagandeep Singh**)

January 2026

- Will do research at the intersection of ML and formal methods, including on RLHF for coding LLMs

**Illinois Theorem Provers Lab**, Urbana, IL (Advisor: **Prof. Talia Ringer**)

August 2025 - Present

- Doing research on improving ML for formal theorem proving and LLMs for code reasoning
- Constructing a framework for fine-tuning an LLM to do proof repair across different software versions of the proof assistant Isabelle
- Exploring novel fine-tuning paradigms for improving LLMs' code reasoning (e.g. output prediction) capabilities
- Testing various techniques to train ML models to emulate fundamental structurally recursive algorithms

**Trustworthy Intelligent Systems Lab**, Austin, TX (Advisor: **Prof. Swarat Chaudhuri**)

August 2023 - May 2025

- Did research in automated theorem proving, LLM agents, and reinforcement learning
- Created, tuned, and evaluated an automated theorem prover that uses a series of LLM agents to generate Lean 4 programs and corresponding formal correctness proofs for the CLEVER benchmark (NeurIPS 2025)
- Helped create PutnamBench, an automated theorem proving benchmark of 640 problems from the Putnam Mathematical Competition, written in the proof assistants Lean 4, Isabelle, and Coq; the PutnamBench paper was accepted at NeurIPS 2024 and won the Best Paper Award at the AI for Math Workshop @ ICML 2024
- Worked on solving reinforcement learning problems with high reward by using pre-trained LLMs to choose actions

**Speech, Audio, and Language Technologies Lab**, Austin, TX (Advisor: **Prof. David Harwath**)

August 2022 - December 2024

- Did research on improving the performance of self-supervised audio ML models (HuBERT)
- Worked on an individual project to improve the efficiency of HuBERT using various methods, including fast Fourier transforms, cross-attention, and knowledge distillation

## PROFESSIONAL EXPERIENCE

**Jane Street Capital Software Engineering Internship**, New York, NY

May 2024 - August 2024

- Implemented two software engineering projects in OCaml and Python, working with databases and data manipulation
- Presented both projects to my teams at the end

## PUBLICATIONS

Amitayush Thakur, **Jasper Lee**, George Tsoukalas, Meghana Sistla, Matthew Zhao, Stefan Zetsche, Greg Durrett, Yisong Yue, and Swarat Chaudhuri. **CLEVER: A Curated Benchmark for Formally Verified Code Generation**. In *NeurIPS 2025 Datasets and Benchmarks Track*, 2025. URL <https://openreview.net/forum?id=lbOacMF5qd>.

George Tsoukalas, **Jasper Lee**, John Jennings, Jimmy Xin, Michelle Ding, Michael Jennings, Amitayush Thakur, and Swarat Chaudhuri. **PutnamBench: Evaluating Neural Theorem-Provers on the Putnam Mathematical Competition**. In *NeurIPS 2024 Datasets and Benchmarks Track*, 2024. URL <https://openreview.net/forum?id=ChKCF75Ocd>.

## HONORS AND AWARDS

**NSF Graduate Research Fellowship**

Fall 2025 - Spring 2030

- National fellowship program for graduate STEM researchers, awarded \$53,000/year for 3 years

**Best Paper Award, AI for Math Workshop @ ICML 2024**

June 2024

- Best Paper Award at the AI for Math Workshop @ ICML 2024 for the paper "PutnamBench: A Multilingual Competition-Mathematics Benchmark for Formal Theorem-Proving"

## SKILLS

**Programming Languages:** Python, C, C++, Java, Rust, Go, OCaml, Coq/Rocq, Lean 4, MATLAB, R, C#, x86/ARM assembly, Verilog

**Technical/Computer Skills:** PyTorch, TensorFlow, Jupyter Notebooks, Git, LaTeX, Linux, SQL, Unity

**Additional Skills:** Technical writing, Presentation