Eric Spencer

(630) 796-5368 | ericspencer1450@gmail.com | ericspencer.us | linkedin.com/in/ericspencer00

Education

Loyola University Chicago — Chicago, IL
B.S. Computer Science, Minor in Information Systems — *Expected May 2026*
- Dean's List (since Fall 2023) | Mulcahy Scholar | Presidential Scholarship

Experience

Technical Founder — Dec 2025 – Present
instxnt.xyz — *Chicago, IL*
- Building an e-commerce brand to provide customers storefront websites automatically generated using AI for free.
- Serve backend requests such as auth, cache, database, and subdomain routing for multiple TLDs.
- Design a customer facing user experience on both web and mobile, ensuring quality and managing functionality.
- Integrated webhook APIs from Stripe, Google, Apple, and Anthropic using TypeScript and JavaScript.
- Created a CI/CD pipeline for both frontend UI and backend API workers on Cloudflare with GitHub branches.
- Containerize application and serve both a production and development server.

Undergraduate Researcher — Aug 2025 – Present
ai4fm at Loyola University Chicago — *Chicago, IL*
- Co-author research papers on formal verification with TLA+ and fine-tuning open-source LLMs.
- Transforming reasoning-capable language models into formal proof assistants, benchmarking performance against existing prover baselines.
- Design and maintain the lab's public-facing website and visual identity, including logo and branding assets.

ITS Service Desk Technician — Jul 2024 – Present
Loyola University Chicago — *Chicago, IL*
- Resolve over 50 support tickets weekly, ensuring prompt and effective technical support for students and staff.
- Use Azure AD and business intelligence tools to verify identity and provision secure account access.
- Collaborate with backend infrastructure teams to investigate and resolve escalated incidents.

Software Engineering Intern — May 2025 – Aug 2025
CCC Intelligent Solutions — *Chicago, IL*
- Implemented full-stack defect resolutions in the B2B claims portal using Vue.js and Spring Boot.
- Built an interactive insurance claims dashboard enabling real-time data visualization for analytics.
- Wrote detailed pull requests and performed QA verification in a CI/CD development pipeline.

Software Engineer — May 2025
Loyola University Chicago, Department of Computer Science — *Chicago, IL*
- Developed a Spring Boot and Vaadin microwave simulator demonstrating TLA+ formal verification in action.
- Delivered a functional, interactive web app from concept to deployment within two weeks.

Software Engineering Intern — Jan 2025 – May 2025
EpiFinder Medical Solutions — *Chicago, IL*
- Automated HR data and permissions workflows using Google Apps Script, reducing manual work by 99%.
- Engineered an automated system to process 400+ email-based access requests in seconds.

Undergraduate Research Assistant — Apr 2023 – Aug 2023
Loyola University Chicago — *Chicago, IL*
- Researched AI interpretability by analyzing ChatGPT v3.0's understanding of advanced Java programming concepts.
- Co-authored documentation and streamlined experimental design for publication.

Projects

ChatTLA-20B | *Python, PyTorch, Hugging Face, LoRA, TLA+*
- Fine-tuned a 20.9B-parameter large language model (based on openai/gpt-oss-20b) to generate formal TLA+ specifications from natural-language descriptions of distributed systems and concurrency protocols.
- Trained the model using supervised fine-tuning with LoRA on a curated dataset of TLA+ specifications and algorithm examples; merged adapters to produce full model weights for inference.
- Developed a benchmark suite of 20 distributed systems problems evaluated with the TLA+ SANY parser and TLC model checker, achieving 30% syntactic validity and 10% full model-check success in single-shot generation.
- Released the model publicly on Hugging Face with multiple inference formats (Transformers, GGUF for llama.cpp, and Ollama integration) enabling local deployment and experimentation.