

# Emilio Andere

emilioandere.com | github.com/technoabsurdist | linkedin.com/in/emi-andere | andere@uchicago.edu

## EDUCATION

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### The University of Chicago

Chicago, IL

B.A. in Computer Science, B.S. in Mathematics

September 2021 - June 2025

- Activities: President/Co-Founder of Blockchain Chicago, Member Kappa Theta Pi (technology fraternity)
- Relevant Coursework: Honors Computer Science I-II, Computer Systems, Computer Architecture, Honors Theory of Algorithms, Discrete Mathematics, Real Analysis I-III, Abstract Linear Algebra, Abstract Algebra, Markov Chains, Martingales, and Brownian Motion, Programming Languages, Fundamentals of Deep Learning (graduate-level)

### Cumbres International School

Guadalajara, Mexico

High School Diploma (Valedictorian, 3rd Place State Math Olympiad)

August 2018 - July 2021

## EXPERIENCE

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### Elicit | Software Engineer Intern

June 2024 – September 2024

- Optimized the research paper upload system by implementing concurrent uploads, resulting in a 15% reduction in average processing time per-upload, handling 200+ concurrent uploads, and increasing overall system throughput by 35%
- Integrated prompt caching into the "chat with papers" feature, reducing per-query latency by 79% and per-query costs by 65%
- Developed the "review answer" feature, showcasing LLM reasoning and the specific paper citations used for model responses
- Tools: TypeScript, React, Python, Node.js, Redis, SQL

### Sphere Labs | Software Engineer Intern

July 2023 – September 2023

- Initiated Sphere's on/off-ramp initiative, building front-end and back-end architecture for crypto to US dollar exchanges to any US bank account by Wire or ACH; on/off-ramp system currently handles over \$300K in monthly volume
- Designed and developed the Bank Accounts API, enabling users to undergo "know-your-customer" verification, and programmatically send stable-coins to any US bank account
- Tools: TypeScript, React, Nest.js, Next.js, Rust (Anchor), SQL

### Security, Algorithms, Networks, and Data Lab | ML Research Engineer

January 2022 – December 2022

- Co-authored NeurIPS 2022 paper "Natural Backdoors in Object Datasets," developing methods to identify and leverage naturally occurring physical backdoors in popular image collections, enabling scalable research on backdoor attacks
- Contributed to Python library naturalbackdoors, used to detect natural triggers in image datasets - adding functionality to rank results based on different centrality measures
- Tools: Python, NumPy, TensorFlow, Pandas

### Impossible Finance | Software Engineer Intern

July 2022 – September 2022

- Developed and implemented a coin-staking protocol with advanced liquidity pool filtering, driving an 11% increase in daily active users and a 15% boost in transaction volume.
- Optimized liquidity operations with Redux-driven middle-layer state management, reducing liquidity pools loading times by ~20%
- Engineered and architected back-end infrastructure for a "learn-and-earn" feature, elevating user platform engagement by 5%
- Tools: JavaScript, Golang, React, Redux, Postgres

### Glip | Software Engineer Intern

February 2021 – July 2021

- Engineered and deployed an automated system for ingesting gaming clips from YouTube links into S3 buckets displayed on the platform, increasing total content uploads by 250%, ultimately resulting in a 7% increase in average session duration
- Tools: Python, AWS (S3)

## PROJECTS

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- Natural Backdoor Datasets: NeurIPS publication and CLI to generate natural backdoors from image datasets
- transcript.ai: LLM-powered YouTube transcriptions including titles, chapters, and summaries in PDF, markdown, and html format
- find-good-podcasts: Podcast semantic search engine including a freely-hosted version with intuitive user interface
- UChifi: Tool to monitor wifi strength across the different libraries of the UChicago campus - 1st place UChicago showcase
- Schoolhouse.world: Founding tutor for Khan Academy's free education platform - taught calculus to 200 students worldwide

## SKILLS

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**Programming Languages:** Typescript, Javascript, Python, C, SML, Haskell, Go, SQL

**Technologies:** React, Next, Node.js, Postgres, Redis, AWS, Docker, PyTorch, NumPy, TensorFlow