RYAN LIN

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EDUCATION

California Institute of Technology (Caltech)   Pasadena, CA
B.S. Computer Science, Minor in Information and Data Sciences *GPA: 4.1/4.0*   Graduation Date: 06/26

<u>Relevant Coursework:</u> Large Language Models for Reasoning, Machine Learning & Data Mining, Data Structures & Algorithms, Discrete Mathematics, Differential Equations, Probability & Statistics, Probability Models

EXPERIENCE

Apple Inc.   Sunnyvale, CA
AI / ML Intern   Jun 2025 – Present
- Designed, implemented, and deployed a production-grade LLM inference server from scratch for the Foundation Model Compute (Infra) team, enabling elastic autoscaling on accelerators, improving resource efficiency by 8x on real use-cases across cross-functional teams.
- Contributed to axlearn, Apple's largest open-source deep learning library.
- One of two intern projects from the org selected to present to Apple AI/ML leadership.

Caltech - Anima AI + Science Lab   Pasadena, CA
Researcher - advised by Dr. Julius Berner, Prof. Animashree (Anima) Anandkumar   Oct 2023 – Present
- Developing new machine learning architectures capable of zero-shot super-resolution for solving families of Partial Differential Equations (PDEs) with arbitrary geometries.
- Incorporating new loss functions to neural operators (ex. physics losses) to improve training speed and data usage.
- Contributed to neuraloperator, an open-source PyTorch-based repository for deep learning on PDEs.

The MITRE Corporation   San Diego, CA
Software Engineering & Machine Learning Intern   Jun – Sep (2021 – 2024)
- One of ≈ five high school students of the 500+ interns selected for the MITRE Internship Program each summer.
- Designed and deployed pipelines leveraging Retrieval-Augmented Generation (RAG), LLMs (OpenAI API + LangChain), and custom embeddings to automate cybersecurity test generation and accelerate delivery of secure system profiles by 500%.
- Developed Heimdall's modern security results viewer (PostgreSQL, TypeScript, Vue) to improve usability of a flagship MITRE product.
- Primary author of the open-source SAF CLI, now with 500,000+ downloads, streamlining security automation for government and industry.
- Authored normalization libraries adopted by federal sponsors and commercial partners, accelerating accreditation processes by 1000%.

PUBLICATIONS

CAT: Curvature-Adaptive Transformers for Geometry-Aware Learning
<u>Ryan Y. Lin</u>, Siddhartha Ojha, Nicholas Bai. *Non-Euclidean Foundation Models Workshop at NeurIPS 2025*

Coarse-to-Fine 3D MRI Reconstruction via 3D Neural Operators
Armeet Singh Jatyani, Jiayun Wang, <u>Ryan Y. Lin</u>, Valentin Duruisseaux, Anima Anandkumar. *Imageomics Workshop at NeurIPS 2025*

Diffusion-Generated Social Graphs Enhance Bot Detection
Alec Laprevotte, <u>Ryan Y. Lin</u>, Siddhartha Ojha. *New Perspectives in Graph Machine Learning Workshop at NeurIPS 2025*

Enabling Automatic Differentiation with Mollified Graph Neural Operators
<u>Ryan Y. Lin</u>, Julius Berner, Valentin Duruisseaux, David Pitt, Daniel Leibovici, Jean Kossaifi, Kamyar Azizzadenesheli, Anima Anandkumar. *Transactions on Machine Learning Research (TMLR), 2025.*

Strategic Collusion of LLM Agents: Market Division in Multi-Commodity Competitions
<u>Ryan Y. Lin</u>, Siddhartha Ojha, Kevin Cai, and Maxwell F. Chen.
Towards Safe & Trustworthy Agents Workshop at NeurIPS 2024. Language Gamification Workshop at NeurIPS 2024

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

Director of Hacktech (Caltech's Annual Hackathon)   Nov 2023 - Present
- Managed a team of 10+ students to organize and execute a 36-hour hackathon with 500+ participants.
- Coordinated with sponsors, judges, and mentors to ensure a successful event.

Y Combinator (YC) AI Startup School   Jun 2025
- Selected as one of 2,500 CS students globally to attend the very first AI Startup School.

NCAA DIII Varsity Swimmer - Caltech Swim & Dive   Sep 2023 - Present

SKILLS

Python, Java, Typescript, JavaScript, R, Ruby, C, C++, Shell Script, PyTorch, Jupyter, Weights & Biases, SLURM, CUDA, Linux, NLP, LangChain, OpenAI API, Huggingface, Agile Development, Kubernetes, CI / CD