

# RYAN LIN

he/him · rylin@caltech.edu · <https://rlin232.github.io> · SF Bay Area

## EDUCATION

### California Institute of Technology (Caltech)

B.S. Computer Science, Minor in Information and Data Sciences *GPA: 4.2/4.0*

Pasadena, CA

Graduation Date: 06/27

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

## EXPERIENCE

### Apple Inc.

AI / ML Intern

Sunnyvale, CA

Jun 2025 - Present

- Inference.

### Caltech - Anima AI + Science Lab

Researcher - advised by Dr. Julius Berner, Prof. Animashree (Anima) Anandkumar

Pasadena, CA

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.
- Performing ablation studies on neural operator architectures to understand the impact of different components on performance and compare against state-of-the-art models.
- Improving code quality and flexibility of the neural operator repository.

### The MITRE Corporation

Software Engineering & Machine Learning Intern

San Diego, CA

Jun 2024 - Sep 2024

- Designed a pipeline leveraging Retrieval-Augmented Generation (RAG) and Large Language Models (LLMs) to enhance domain-specific knowledge retrieval and automate the creation of security tests from Security Technical Implementation Guides (STIGs), accelerating security profile delivery by 500%.
- Utilized OpenAI API and LangChain's Chroma vector store, and custom embeddings to optimize context retrieval from various security resource documentations.

Software Development & DevSecOps Intern

Jun 2023 - Sep 2023

- Engineered an end-to-end DevSecOps pipeline for Security Automation Framework (SAF) using applications, libraries, and tools created by MITRE and the security community. Deployed pipeline on EC2.
- Automated pipeline for key tasks (hardening, validation, visualization) to inform platform owners of security risks and accelerate capability deployment in development, test, and prod environments by up to 500%.
- Presented and demonstrated the prototype pipeline directly to corporate partners and government sponsors, articulating intricate technical details while highlighting its operational benefits and simplicity.

Software Engineering Intern

Jun 2022 - Sep 2022

- Developed a modern reimplement for STIGViewer within Heimdall (a full-stack app for viewing security results). The backend uses PostgreSQL, JavaScript, and Typescript. The frontend uses Vue and Typescript.

Software Engineering Intern

Jun 2021 - Sep 2021

- One of  $\approx 5$  high school sophomores out of all the (500+) interns selected for the MITRE Internship Program.
- Authored the SAF CLI (Command Line Interface), an open-source software that streamlines security automation for IT Systems and DevOps pipelines with over 100,000 downloads by the security community.
- Created and published libraries to normalize outputs from various cybersecurity scanning tools into Heimdall Data Format for government sponsors and commercial partners, accelerating accreditation processes by up to 1000%.

## PUBLICATIONS

### Enabling Automatic Differentiation with Mollified Graph Neural Operators

Ryan Y. Lin, Julius Berner, Valentin Duruisseaux, David Pitt, Daniel Leibovici, Jean Kossaifi, Kamyar Azizzadenesheli, Anima Anandkumar. *arXiv:2504.08277*

### Strategic Collusion of LLM Agents: Market Division in Multi-Commodity Competitions

Ryan Y. Lin, 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

### Y Combinator (YC) AI Startup School

Jun 2025

- Selected as one of the top 2,000 CS students in the world to join the very first AI Startup School.
- Learned from world-class AI leaders (Satya Nadella, Sam Altman, Fei-Fei Li, Chelsea Finn, and more).

### 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.

### 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