# MATTHEW YANG

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## Education

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| **University of California, Los Angeles** | Sept 2024 - Jun 2025 |
| *M.S. in Computer Science* | |

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| **University of California, Los Angeles** | Sept 2020 - Jun 2024 |
| *B.S. in Computer Science and Engineering* | GPA 3.867, Cum Laude |

**Affiliations**: Upsilon Pi Epsilon Honor Society (UPE), Association of Computing Machinery (ACM), Society of Automotive Engineers (SAE)

## Skills

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| **Languages**: | Python, C, C++, C#, Java, JavaScript, TypeScript, SQL, Verilog, HTML/CSS, Bash, React, Swift, Vue, Powershell |
| **Technologies**: | Next.js, Node.js, Express, PyTorch, AWS, Dask, Spark, Docker, Google Cloud Platform, Unity, MATLAB, Jira, FPGA |
| **Expertise**: | Machine Learning, Cloud Computing, System Design, Embedded Systems, AGILE, SCRUM, Large Language Model |

## Professional Experience

**Zoox** · Foster City, CA  　　　　　　　　　　　　　　　　　　　　　　　　　Jun 2024 – Sep 2024
Subsidiary of Amazon
Software Engineer Intern: Machine Learning [ Python | PyTorch | Flask | Dash ] Docker |
· Developed **parameter autotuning pipeline** for **autonomous vehicle planner model** that automates **scenario simulation, benchmarking, evaluation, and optimization**, resulting in **350% increase** in model training efficiency
· Built a **full-stack dataset registry** for managing, visualizing, and version-controlling vehicle drive data
· Designed **APIs** connecting dataset registry to **data generator** and **evaluator**, accelerating ML lifecycle by **2.25x**
· Managed deployment of **Docker** containers on **AWS ECS clusters** with automation from **Terraform**

**Deloitte** · San Jose, CA  　　　　　　　　　　　　　　　　　　　　　　　　Jun 2023 – Aug 2023
Cyber & Strategic Risk Intern [ Python | ISO27001 | Pandas | PowerShell ]
· Optimized cybersecurity architecture for a **Fortune 10 tech company** based on **ISO27001** and **NIST Framework**
· Constructed **network security infrastructure** tailored to client's **Identity and Access Management (IAM)** system
· Accelerated workflow by **85%** via building **file parsing and storage pipeline** with **Python and PowerShell scripts**

**Poppin Technologies** · Los Angeles, CA  　　　　　　　　　　　　　　　　Feb 2023 – May 2023
Software Engineering Intern [ React | TypeScript | Tailwind | Postgres | Firebase | Go ]
· Built a **full-stack** event management platform connecting **50,000 users** to **1,000 events**, totaling **$200k** in transactions
· Implemented **QR code ticketing system** for attendees and **real-time attendance data analytics** for event hosts
· Oversaw the maintenance of **PostgreSQL** database and migration to **Firebase** and **Firestore**

## Research and Publications

**UCLA Trustworthy AI Lab** · Los Angeles, CA  　　　　　　　　　　　　　Mar 2023 – Present
Research Engineer Intern: Machine Learning [ Python | PyTorch | Scikit-learn | Dask | LLaMA | Matplotlib | Numpy ]

*Xiaofeng Lin, Chenheng Xu, **Matthew Yang**, and Guang Cheng, "CTSyn: A Foundational Model for Cross Tabular Data Generation," arXiv (Cornell University), Jun. 2024, doi: https://doi.org/10.48550/arxiv.2406.04619.*

· Developed foundational model for **tabular data generation**, employing **diffusion-based model** to produce artificial datasets mimicking the original data, to optimize machine learning model training
· Implemented **data generation pipeline** that allows smooth integration of custom models and algorithms, featuring a scalable **decoupled microservices architecture** achieved by **SOLID principles** of **OOP design**
· Led a team of 4 to design a **synthetic data evaluation framework** that uses **statistical testing, adversarial learning, and ensemble learning** to perform supervised **downstream evaluation** of synthetic data privacy and utility
· Designed a **large data pre-processing module** that uses **distributed computing** to batch process datasets up to **500GB**

## Clubs & Projects

**UC-LlAma – Llama 3 based UCLA Counselor** · Los Angeles, CA  　　　Mar 2024 – Jun 2024
Machine Learning Engineer [ Python | PyTorch | Google Cloud | LLaMA 3 | BERT | ElasticSearch ]
· Built a class counselor bot with a **Llama-3 model** through **supervised fine-tuning (SFT)** with **PEFT / LoRA** techniques
· Boosted accuracy by **45%** by creating **Elasticsearch vector database** and embedding data with **uncased BERT model**
· Designed a **prompt generator** that generates **n-shot prompt-answer pairs** from class data at **800% usage efficiency**

## Certifications

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| **AWS Certified Solutions Architect Associate** | **React Front to Back** | **Data Scientist: Machine Learning Specialist Career Path** |
| Amazon, 2023 | Udemy, 2022 | Codecademy, 2021 |