

Zachary Doll

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Applied machine learning, full-stack systems, and data-intensive pipelines

EDUCATION

UNIVERSITY OF CALIFORNIA - LOS ANGELES

Los Angeles, CA

Bachelors of Science

Major in Computer Science

Cumulative GPA: 4.0/4.0

Relevant Coursework: Algorithms, Data Structures, Java Programming, Assembly, Software Construction

Expected Jun 2027

EXPERIENCE

Physics Group Tutor (Independent) - El Camino College

Torrance, CA

Feb 2024 – Jun 2025

- Facilitated biweekly group tutoring sessions covering topics from introductory physics through modern Physics for **50+ students**
- Developed and delivered customized instructional materials, examples, and live problem-solving workshops
- Improved average exam performance **by an estimated 10%** through structured practice and targeted guidance

PERSONAL PROJECTS

MLB Pitch Predictor - pitch-predictor.onrender.com | [Github](#) | [Project Overview](#)

Sep 2025

- Built an end-to-end machine learning pipeline in Python to analyze **12M+ MLB pitch records (2009–2025)**, achieving approximately **75% prediction accuracy** on pitch outcome classification
- Engineered scalable data ingestion, preprocessing, and feature extraction workflows; evaluated **5+ ML algorithms** (logistic regression, random forest, gradient boosting), improving baseline performance by **~15% over naïve models**
- Developed a full-stack web application using **React** and **Node.js** to visualize millions of pitch-level records via interactive heatmaps with **sub-second query/render times**

ASL Translator - [Github](#) | [Project Overview](#)

Oct 2025

- Implemented a live ASL recognition system using **MediaPipe** for keypoint extraction and an **LSTM neural network** for gesture classification
- Trained and evaluated the model on **80,000 labeled gesture sequences** spanning **2,500+ ASL words**, achieving **~65% top-1 classification accuracy**
- Built a low-latency gesture-to-text inference pipeline using **OpenCV** and a web frontend, delivering end-to-end prediction latency of **<100 ms per gesture**
- Improved model robustness through preprocessing, sequence normalization, and data filtering, increasing validation accuracy by **~10–15%** and reducing misclassification on rare classes

Forum Patch Note Summarizer - [Github](#) | [Project Overview](#)

Dec 2024

- Built an automated Python bot using the **Discord API** and **ChatGPT** to detect and summarize new forum posts, delivering notifications to **200+ subscribed users** and reducing manual content review time by **~80% per update**
- Deployed the system on **AWS Ubuntu** for continuous operation; open-sourced the codebase for plug-and-play deployment across any Discord community or forum-backed server
- Hardened the service by implementing **error handling**, **rate limiting**, and **structured logging**, maintaining **>99% successful message delivery** under concurrent load

ACTIVITIES

ChessGPT - ACM AI at UCLA | [Project Overview](#)

Los Angeles, CA

Member

Sep 2025 – Present

- **Contributed** to the development of a domain-specific transformer-based LLM for chess strategy, move prediction, and natural-language analysis, **supporting** inference over **millions of positions** across **100k+ games**
- **Developed** evaluation tooling to **compare** model-generated moves against **engine baselines (e.g., Stockfish)** and human play, **quantifying** performance via **top-k move agreement** and **Elo-correlated accuracy metrics**

ADDITIONAL

Languages: Python, C++, Java, JavaScript, HTML/CSS, SQL

Skills/Frameworks: Node.js, React, Scikit-learn, PyTorch, Tensorflow, pandas, Matplotlib, Flask, Discord.py, Git, Unity, Web Development, MongoDB, AWS, Computer Vision, REST APIs, Deep Learning

Certifications: Google Data Analytics Professional Certificate | Supervised Machine Learning: Regression and Classification

Awards: Howmet Aerospace Scholarship