

Zach Hersick

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EDUCATION

The University of San Diego | San Diego, CA

B.S. in Computer Science, Concentration in Data Science & AI | GPA: 3.59/4.0

May 2027

Relevant Coursework: Algorithms, Object-Oriented Programming, Computer Systems, Computer Networks, Database & Web Development, Machine Learning, Artificial Intelligence, Data Science, Probability & Statistics, Linear Algebra, Discrete Math, Theory of Computation

TECHNICAL SKILLS

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

Frameworks & APIs: FastAPI, Django, Django CMS, Pydantic, SQLAlchemy, REST APIs, Streamlit, Tailwind CSS

AI/ML & Data: OpenAI API, RAG, embeddings, pgvector, scikit-learn, TensorFlow/Keras, pandas, NumPy, RAG evaluation

Tools & Systems: PostgreSQL, SQLite, Docker, Docker Compose, Git, GitHub Actions (CI/CD), pytest, Ruff

RELEVANT EXPERIENCE

Junior Engineer Intern/Contractor - AI & Python | Syneos Health | Remote

June 2025 - July 2026

- Designed and developed reusable Django CMS components for a pre-release training platform, owning features across backend logic, serialization, UI integration, debugging, and iterative refinement
- Built a standalone interactive game system from an initial scaffold, implementing application logic and integrating the completed functionality into the broader Django-based training platform
- Collaborated directly with engineering leadership on component architecture, implementation decisions, landing-page design, Django serializers, and debugging complex functionality across the Python/Django stack

PROJECTS

Vision-Guided Follow-Me Robot | Qualcomm Senior Capstone

Sep 2026 - May 2027

Dragonwing IQ9, Computer Vision, Track Anything, Embedded AI

- Developing an embodied AI system that visually identifies and tracks a selected person or object using the Track Anything segmentation/tracking model on Qualcomm's Dragonwing IQ9 platform
- Designing a closed-loop perception-to-control pipeline that maps target position and distance to robot motion while enforcing speed, emergency-stop, lost-target, and minimum-distance safety constraints
- Building offline and live-camera validation workflows to evaluate tracking confidence and failure cases including occlusion, target loss, latency, and changing lighting conditions

AnomalyOps Copilot | Python, FastAPI, OpenAI API, PostgreSQL, pgvector, Pydantic, SQLAlchemy, Docker

- Built a production-oriented RAG service that ingests 32 source documents into 133 chunks using OpenAI embeddings and pgvector, returning grounded answers with validated line-level citations and explicit refusals for unsupported queries
- Developed a bounded tool-calling operations agent across 4 read-only anomaly API tools with Pydantic schemas, evidence and run-consistency guardrails, sanitized failures, and correlated request tracing for observability
- Improved semantic retrieval by increasing embedding dimensions from 16 to 256, raising Hit@5 from 40% to 93.3%, MRR@5 from 0.256 to 0.733, and overall evaluation pass rate from 40% to 75% across 20 cases

Industrial Anomaly Detection and Alerting Platform | Python, pandas, scikit-learn, FastAPI, SQLite, Streamlit, Docker

- Built an end-to-end anomaly detection pipeline generating 50,000 synthetic industrial sensor readings across 10 machines, engineering 228 time-series features, and training a Random Forest classifier achieving 97.69% accuracy and 94.15% anomaly recall on a held-out test set
- Designed a full ML systems backend with saved model artifacts, feature-order validation, SQLite persistence, and FastAPI endpoints for run summaries, alert events, critical event filtering, dashboard aggregation, and model inference through POST /predict
- Developed a Streamlit monitoring dashboard and Docker Compose deployment for the FastAPI and dashboard services, with pytest and GitHub Actions CI covering pipeline logic, database loading, API validation, filtering, pagination, and model-serving behavior