

Edward Zhang

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EDUCATION

University of Pennsylvania | *B.S.E Computer Science, Mathematics* | *GPA: 4.0/4.0*

Expected: May 2028

Relevant Coursework: Data Structures and Algorithms, Computer Systems, Discrete Mathematics, Probability, Advanced Linear Algebra, Big Data Analytics, Theory of Computation, Automata, Computability and Complexity, Market and Social Systems on the Internet

EXPERIENCE

Hong Kong Science & Technology Parks | **AI & Data Intern** – Hong Kong

June 2025 - August 2028

- Engineered an OCR/ML pipeline that digitized 10,000+ handwritten marine forms with 98% accuracy, eliminating manual data entry for the Hong Kong Marine Department and reducing processing time by 80%.
- Designed and deployed a Kubernetes-based system that auto-allocated berthing slots; peak throughput of 2,000+ vessels/day.
- Led LLM benchmarking and optimization that lowered inference costs by 25%, shaping \$10M+ GPU infra investment decisions.

Hack4Impact | **Project Manager, Full-Stack Software Engineer** – Philadelphia, PA

September 2024 - Present

- Led a 10-member team through full-stack implementation with React, Node.js, PostgreSQL, and JWT authentication, creating a learning management system for CELF Education, serving 1.5M+ students across 5,000+ schools.
- Designed real-time analytics dashboards and data pipelines for food security platform Fulfill NJ, integrating MySQL and AWS to visualize food distribution across 21 counties and reduce query latency by 65%.

Rajapakse's Lab | **Research Software Developer** – Philadelphia, PA

Jan 2025 - Aug 2025

- Developed a full ML preprocessing and feature extraction pipeline for bone density estimation from 3D CT scans, improving AUC by 10% on 50K+ DICOM samples.
- Integrated PyTorch models with TensorFlow-based training scripts to test deep CNN architectures for volumetric bone analysis; automated hyperparameter tuning and cross-validation workflows.

Wharton Analytics Fellows | **Senior Data Analyst** – Philadelphia, PA

Aug 2025 - Present

- Engineered a full-stack analytics pipeline in Python, SQL to process 100K+ donor records, automating data cleaning, feature generation, and cluster analysis for Penn Vet's advancement team.
- Designed a visualization system integrating PostgreSQL, Pandas, and Plotly Dash, delivering real-time donor segmentation insights that powered a 25% improvement in targeted fundraising campaigns.

Discrete Mathematics Teaching Assistant (CIS 1600) – Philadelphia, PA

May 2025 – Present

- Teaching weekly recitations for ~20 students, held office hours, designed assignments and grading criteria, led exam review sessions for ~250 students. Facilitating learning in advanced topics such as proofs, combinatorics, probability, and graph theory.

PROJECTS

Course Recommender System | *Python, FastAPI, Scikit-learn, React, Redis*

- Built a hybrid recommendation engine combining TF-IDF content similarity with collaborative filtering across 20K+ course reviews, generating personalized course suggestions with sub-100ms inference latency, React frontend backed by Redis caching and FastAPI.

Vessel Berthing Automation Platform | *Docker, Kubernetes, Go, REST APIs*

- Developed a microservice-based vessel scheduling engine that ingested OCR-processed forms and generated real-time berth allocations.
- Designed autoscaling, containerized services with Redis-backed job queues and health-check routing, supporting 1K+ daily requests.

Learning Management System | *React, Express, Node, PostgreSQL*

- Architected and shipped a full LMS supporting course modules, teacher dashboards, and authentication for 1.5M+ students.
- Implemented scalable backend APIs and optimized database design for multi-school usage.

AWARDS

USACO Gold Division (Top 1,000 competitors globally), Hong Kong Olympiad in Informatics Bronze Medallist & Training Team (Top 20 competitors in HK), Hong Kong Secondary School Coding Challenge Bronze Medallist, UK Mathematics Challenge Gold Award x5

SKILLS & INTERESTS

Technical Skills: React, Node, C++, Rust, Go, Python, Java, C, JavaScript, TypeScript, SQL, OCaml, Linux, Git, Docker, Kubernetes, GraphQL, PostgreSQL, MySQL, MongoDB, AWS, Pandas, NumPy, TensorFlow, PyTorch, Machine Learning, Game Theory, Data Analysis

Hobbies: Soccer, NFL, Formula 1, Piano, Food Enthusiast, Traveling, Gym, Hiking, Camping, Swimming