Eric Zhao

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Education

Carnegie Mellon University

M.S. in Artificial Intelligence Engineering – GPA: 4.0/4.0 **May 2025**

B.S. in Mechanical Engineering, Additional Major in Chinese Studies – GPA: 3.78.0/4.0 **May 2024**

Courses (Graduate): Machine Learning, Introduction to Deep Learning, Intermediate Deep Learning, Numerical Methods, Trustworthy AI Engineering, Data Structures and Algorithms, Engineering Computation, Dynamic Systems & Controls

Experience

Analytics 4 Everyone LLC **May 2025 - Aug 2025**

Software Engineering Intern - Artificial Intelligence

- Building and evaluating LLM applications for B2C solutions to simplify access and use of educational resources

CERLAB (Computational Engineering & Robotics Lab) **May 2021 - Dec 2024**

Student Researcher

- Led two projects related to biomedical and mechanical engineering: Anisotropic Padding and Latticed Prostheic Liners
- Created printable anisotropic latticed prosthetics for transfemoral amputees, leveraging machine learning techniques to predict stress-strain distributions and analyze relationships between lattice parameters and resulting physical properties

Projects

Imitation and Reinforcement Learning for Prosthesis & Exoskeleton Control **Dec 2024 - Present**

- Developed and compared deep learning approaches (**VAIL** and **PPO**) for transitibial prosthesis control in humanoid locomotion models, successfully generating adaptive control policies for reproducing human gait patterns
- Engineered simulations in **MuJoCo**, optimizing controller performance with limited sensor data, simulating actual prosthetic applications
- Demonstrated the potential of imitation and reinforcement learning for developing adaptable prosthetic controllers

Multi Agent Reinforcement Learning with LLMs for Safe Path Planning **Aug 2024 - Present**

- Designed semantic reasoning and context-aware obstacle classification method by integrating GPT-4 with state-of-the-art **Multi-Agent Reinforcement Learning** (MARL) framework, achieving **94% accuracy** in severity classification
- Programmed Rapidly-Exploring Random Trees (**RRT**) based planning algorithm with **LLM**-guided penalties, improving safe navigation around obstacles by **80%** with reinforcement learning using **OpenRL** and **Pytorch** libraries
- Conducted large-scale reinforcement learning training in NVIDIA's **IsaacGym**, processing over 100M steps across 500 parallel environments on NVIDIA GPUs, achieving robust obstacle avoidance and reliable trajectory generation
- Showed **14% improvement** in safe navigation for high-severity hazards compared to traditional frameworks

FIFA Soccer Player Analytics and Predictive Modeling **Sep 2024 - Dec 2024**

- Ingested and consolidated **100K+** player records from FIFA datasets (2015-2022) into a **PostgreSQL** database with schema alignment, unique identifiers, and added features for year-based analytics
- Created scalable Python functions for data analysis, handling complex scenarios like tied ranks and invalid inputs
- Achieved **95% accuracy** in predicting player overall value using **Random Forest Regressor** and compared implementation performance across Pytorch, PySpark and TensorFlow frameworks

Leadership & Awards

Carnegie Mellon University **Rales Fellow** (Graduate Fellowship, ∼**90k/yr, 1 year**) **2024 – Present**

Carnegie Mellon University **Tartan Scholar** (High Achieving Student Leaders) **2020 - Present**

Carnegie Mellon University Food Pantry **Lead Coordinator** **2021 - Present**

Gates Scholarship Cohort III (Full Ride Undergraduate Scholarship) **2020 - 2024**

Carnegie Mellon University College of Engineering's **Dean's List (6X)** **2020 - 2024**

Skills

Programming Languages: Python, C++, C, SQL, MATLAB, LaTeX

Tools: GCP, AWS, Github, Docker, Wandb, Gymnasium, MuJoCo, IsaacGym, PostgreSQL, Apache Kafka

Frameworks: PyTorch, TensorFlow, NumPy, SciPy, scikit-learn (Sklearn), Pandas, Matplotlib, PySpark, Django