Eric Werner

LinkedIn: linkedin.com/in/ewernn **Email:** ewern@stanford.edu
Site: ewernn.github.io **GitHub:** github.com/ewernn

EDUCATION

- **M.S. in Computer Science, Stanford University** **January 2022- June 2023**
- **B.S. in Engineering Physics, Stanford University** **September 2018- June 2022**
  - **Relevant Coursework:** AI: Machine Learning Principles, Robot Autonomy, Computer Vision, Deep Learning, Natural Language Understanding, Deep Reinforcement Learning, Systems, Probability, Algorithms (non-ML & ML)
  - Physics: Quantum/Advanced/Statistical Mechanics, Signal Processing, EM I & II, Light & Heat, Dynamics
  - Math: Linear Algebra, Multivariable and Integral Calculus, ODEs and PDEs

RELEVANT EXPERIENCE

Machine Learning Engineer - MetronMind, Paso Robles, CA **November 2023 - Current**

- Developed computer vision models for veterinary radiography (dogs, cats, horses)
- Implemented localization, object detection, and segmentation for various anatomical features
- Optimized models through data annotation, hyperparameter tuning, and efficient data loading

Software Engineer - Metasense, Sunnyvale, CA **June 2022 - August 2022**

- Wrote sensor fusion algorithm using Kalman filter for pose estimation (C++, Python), used by 13 sensors on human body to visualize movement in 3D for sports training.
- Wrote jump classifier from accelerometer data, which added z-dimension functionality to the simulation.
- 3D-printed “clamshell” PCB housing, from CAD to injection molding.

Circuit Design Engineer - Flux GmBH, Braunau am Inn, Austria **June 2021 - August 2021**

- Designed and implemented overcurrent protection circuit for safe testing of positional encoders and research equipment.
- Circuit relied upon ~500 times/month for testing new designs and tweaks, as sensor's power goes through device.

Research Assistant - Stanford Power Electronics Lab, Stanford, CA **June 2019 - August 2019**

- Designed custom capacitor to research energy loss in liquid dielectrics; presented findings to department.
- Presented to ~50 departmental peers. Data used for research on higher density (smaller) transformers.

Group Leader - Engineers for a Sustainable World, Stanford, CA **October 2018 - June 2022**

- Led installation of 34 solar panels for a meditation center. Efficiently coordinated three teams.
- Trained 14 volunteers for repair efforts. Facilitated 10 repair “cafes” to fix people’s broken items.

TECHNICAL PROJECTS

WhyAI - Personalized AI Assistant App (In Development)

- Built iOS app that connects with LLMs (Claude API, Qwen3 locally) while keeping user data private
- Designed system to store and manage user information securely using local encryption
- Created service layer to handle user profiles, AI interactions, and data updates

Model Free Reinforcement Learning for Robotic Arm on Kitchen Tasks using Visual Transformer (ViT) Encoder

- Improved sample efficiency on Microsoft's VRL3 reinforcement learning framework. To do so, we replaced the basic image encoder (ResNet18) with a transformer foundation model trained specifically for Embodied AI (VC-1) for 5x increased sampcle efficiency. Added Reinforcement Learning from Prior Data (RLPD) to improve robustness during exploration and increase online finetuning sample efficiency by 1.5x. Collaborated with 1 teammate.

Designed and Trained Autonomous Wheeled Robot

- Coded autonomous robot with ROS to perceive and navigate an environment, stopping at stop signs and visiting pictures of animals in a specific order. Perceived using LiDAR to make point clouds for SLAM (Simultaneous Localization and Mapping), and computer vision for object detection. For navigation, wrote A* for path planning and controllers for trajectory tracking.

Finetuned Convolutional Neural Network to play GeoGuessr (image classification)

- Fine-tuned ResNet50 for 20-country classification using 38k Google Streetview images, achieving 72.5% accuracy through data augmentation and hyperparameter optimization. Collaborated with 1 teammate.

SKILLS

- **Programming Languages:** Python, C, C++, Java
- **Frameworks:** PyTorch, Langchain, MMCV, Numpy, Scikit-learn, Scipy, Pandas, Matplotlib, Git, ROS, Swift, Express.js
- Additional Skills: MongoDB/Mongoose, JWT authentication, RESTful API design