Josh Zhang

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EXPERIENCE

UC BERKELEY AUTOLAB / BAIR **Berkeley, CA**
AI, Robotics, and Automation Researcher *May 2024 – Present*

- Spearheaded work on Robot-Assisted Surgery & Search-and-Rescue Robot projects with Prof. Ken Goldberg.
- Developed ML model for robust surgical tool grasping and efficient suture manipulation on a Da Vinci robot.
- Implemented and trained RL models in PyTorch and IssacGym for autonomous navigation on a robot dog.
- Managed and engineered a TensorFlow data platform optimizing robot data storage from 21+ research labs.

GAMESCRAFTERS **Berkeley, CA**
Computer Vision and GPU Engineer *Jan. 2024 – Present*

- Directed research in image processing and GPU acceleration to live-analyze and perfectly solve board games.
- Trained convolutional neural network to accurately identify game states in diverse angles and environments.
- Created algorithms merging Python and CUDA on cloud GPUs to parallelize solving for optimal strategies.
- Refined and published full-stack website demoing the software's applications in computational game theory.

MODEL PREDICTIVE CONTROL LAB **Berkeley, CA**
Machine Learning and Robotics Researcher *June 2023 – May 2024*

- Supervised project in reinforcement learning and high-speed autonomous driving on scale-model race cars.
- Designed recurrent neural networks in PyTorch for motion planning and low-visibility obstacle avoidance.
- Validated and trained RL models in sim-to-real with OpenAI Gym environments and physical experiments.
- Gained in-depth experience in model predictive control (MPC), Robot Operating System (ROS), and DNNs.

PLATTERPALS INC. **Berkeley, CA**
Co-Founder and Chief Technology Officer *June 2022 – May 2023*

- Lead developer at PlatterPals, a funded startup building an AI-powered food recommendation mobile app.
- Built full-stack platform from scratch that suggests personalized restaurants based on a user's favorite foods.
- Utilized natural language processing in training large language models to collect and analyze online data.
- Maintained and aggregated large datasets, compiled queries with SQL, and visualized results with Pandas.

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY **Aug. 2022 – May 2025**
Electrical Engineering and Computer Sciences, B.S. *GPA: 3.93*

Relevant Coursework:

- CS 61B: Data Structures and Algorithms
- CS 61C: Computer Architecture (Machine Structures)
- CS 70: Discrete Mathematics and Probability Theory
- CS 61A: Interpretation of Computer Programming
- EECS 151: Digital Design and Integrated Circuits
- ELENG 105: Microelectronic Devices & Circuits
- ELENG 120: Signals (Processing) and Systems
- EECS 16A / 16B: Designing Information Devices

Activities and Societies: • Eta Kappa Nu (HKN) • Tau Beta Pi (TPB) • Space Technologies at Cal • IEEE

TECHNICAL SKILLS

- **Languages:** Python (Pandas, NumPy), C, C++, C#, CUDA, Java, Swift, Javascript, HTML, CSS, SQL, Go
- **Frameworks:** PyTorch, Tensorflow, Keras, Caffe, Django, Flask, Node, React, AWS, Apache, Hadoop, Spark

- **Software:** AI / ML, Deep Neural Networks, Robotic Controls, Full-Stack Development, Operating Systems
- **Hardware:** ROS, ASIC & FPGA Design, IC & PCB Engineering, Analog / Digital Circuits, GPU Architecture
- **Tools:** Git, Docker, Jira, JetBrains, Altium, AutoCAD, Cadence, LTSpice, MATLAB, (System) Verilog, VHDL