

Eric S. Cheng

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EXPERIENCE

Software Engineer, Machine Learning — Meta September 2025 - Present

- Developed and deployed multi-modal classifiers to detect fraud and scam content across Facebook, Instagram, and Threads at scale
- Drove a 4% reduction in user-reported scams platform-wide by designing LLM few-shot prompting pipelines and supervised fine-tuning workflows for content integrity classifiers, establishing evaluation frameworks to maintain 90%+ precision/recall

Creative Technologist-In-Residence — [Gray Area](#) April 2025 - December 2025

- Designed and developed [MUNI Meadow](#), a location-aware mobile app mapping 50+ California native wildflower species across bus/metro lines, gamifying public transit as a collaborative digital garden with leaderboards, badges, and real-time visualizations
- Built end-to-end mobile infrastructure including Clipper card detection, deep linking, push notifications, and real-time transit integration using React Native, TypeScript, Mapbox, Firebase, and the 511 Open Data API, distributed via TestFlight
- Presented at the [Gray Area Cultural Incubator Showcase 2025](#) with a projected installation to 200+ artists and technologists

Software Engineer, Machine Learning & Graphics — Unity June 2022 - February 2025

- Architected AI workflows for [non-destructive environment editing](#), empowering artists with accessible 3D worldbuilding tools
- Trained and deployed GANs and diffusion models (standard, latent) on Azure across 6,000+ square kilometers of USGS heightmaps to generate realistic and diverse terrain, incorporating style encoders (DINOv2, Swiftformer) to capture desired styles
- [Integrated models with 3D brush tools](#) by creating a novel texture tiling system and caching mechanism that selectively processes modified regions, enabling for efficient sculpting with real-time ML inference without dependency on server-side computation
- Engineered HLSL shaders for seamless ML-generated texture blending with sculpted height, utilizing brushstroke mask textures
- Implemented production-grade noise schedulers (DDIM, DPM++ 2M Karras) in C#, optimizing diffusion inference in Unity
- Built [LLM-powered interface](#) transforming text to structured asset configurations, enabling rapid prototyping of biome generation

Deep Reinforcement Learning Researcher — [Berkeley Artificial Intelligence Research \(BAIR\)](#) August 2021 - June 2022

- Led the implementation of imitation learning (behavior cloning, DAgger) and DDPG from demonstrations to run self-driving cars in the [CIRCLES](#) consortium to smooth traffic flow, achieving a 20% fuel economy improvement compared to baseline
- Co-authored [paper](#): “Traffic Control via Connected and Automated Vehicles: An Open-Road Field Experiment with 100 CAVs”
- Developed comprehensive testing infrastructure and data visualization pipeline with MATLAB, Javascript, Django, MySQL, used for visualizing metrics, evaluating multiple controllers in [FLOW](#), and processing millions of motion and energy data points
- Migrated off AWS S3/Athena and set up local data infrastructure using Nginx, Unicorn, PostgreSQL, saving \$400+ per month

Co-founder & Tech Lead — [Connect@Cal](#) May 2020 - May 2022

- Led a cross-functional team of ~20 designers and developers creating a resource connection platform serving 40,000+ students
- Architected a full-stack resource-filtering application using React, Flask, AWS, and PostgreSQL, increasing student usage by 2x
- Built a BERT-based recommendation system in TensorFlow to match cases with resources, reducing matching time by 50%

Software Engineering Intern — [Nylas](#) May 2021 - August 2021

- Developed a gRPC client/server for Docker intercommunication with IMAP search, MIME extraction, and JSON translation
- Built Golang microservices improving email sync latency from ~6 hours to ~10 seconds across providers like Gmail and Yahoo

Game Developer — [Homestead Hero](#) February 2021 - May 2021

- Built a 2D RPG in Unity featuring combat, hunting, resource gathering, NPC trading, and homestead customization systems
- Architected enemy and animal AI using behavior trees, A* pathfinding, and finite state machines to drive dynamic combat encounters, boss fights, and creature behaviors, iterating closely with designer to balance difficulty and pacing

Software Development Engineer Intern — Amazon Lab126 June 2020 - August 2020

- Built full SoC x86 emulation for the Amazon Astro robot on QEMU with inter-SoC networking/communication in C++
- Introduced features such as hardware sensor evaluation and rapid prototyping and enabled 3,000+ developers to test software

SKILLS

Languages: Python, C#, C/C++, Java, JavaScript/TypeScript, Golang, HTML/CSS, SQL, MATLAB, Bash, HLSL

Frameworks/Libraries/Tools: Unity, React (Native), Flask, Django, Azure, GCP, AWS, Docker, ROS

ML/AI: PyTorch, TensorFlow, Keras, Scikit-learn, NumPy, Pandas, Matplotlib, NLTK, OpenCV, MLFlow, ONNX

EDUCATION

University of California, Berkeley August 2018 - May 2022

B.S. Electrical Engineering and Computer Science (EECS) | Minor: Public Policy

Relevant Coursework: Deep Learning, Computer Vision, Robotics, Machine Learning, Artificial Intelligence, Optimization Models, Probability & Random Processes, Data Science, Algorithms, Operating Systems, Computer Security