Ethan Harianto

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Education

Stanford University

MS in Computer Science (AI) — Expected June 2026

BS in Computer Science (Systems) — Expected June 2026

Relevant Coursework: Deep Learning, Spoken Language Processing, Artificial Intelligence Principles, Design & Analysis of Algorithms, Operating Systems Principles, Hardware Accelerators, Computer Architecture

Experience

Junior Software Developer, Pantheon Lab — June 2025 – Aug 2025

- Built a distributed inference pipeline in Go handling 1,000+ concurrent requests; implemented rate-limiting to prevent outages during demand spikes.
- Reduced voice-agent latency by 30% (<500ms) via in-memory audio processing (WebRTC), directly improving conversation fluidity for end users.
- Engineered a containerized deployment strategy using Docker, ensuring 100% environment parity between development and production for distributed microservices.

Develop for Good, Engineering Lead — May 2025 – July 2025

- Engineered member dashboards for 50+ global chapters, centralizing event data and reducing weekly administrative workload by 8 hours per chapter.

Research Assistant, Stanford PinCS Lab — Mar 2025 – June 2025

- Developed a Swift-based mobile app leveraging AssemblyAI's API for real-time transcription, designed to aid memory recall for early-stage Alzheimer's patients in a university pilot study.

Projects

Aboard the Icarus | TypeScript, Next.js 14, Google Gemini API — Dec 2025 - Jan 2026

- Implemented an inference pipeline with a multi-model fallback strategy (Gemini Flash/Pro/Gemma), achieving zero cost through adaptive model routing.

LyricNet: Multimodal Music Emotion Recognition |Python, Pytorch, Transformers — Oct 2025 - Dec 2025

- Developed a multimodal deep learning framework fusing DistilBERT lyric encodings with normalized audio features to predict emotional states.

Operating Systems Kernel (Pintos) | *C, x86 Assembly* — Mar 2025 - June 2025

- Engineered a multi-threaded OS kernel in C, implementing priority scheduling that reduced thread starvation by 50% compared to round-robin baselines.
- Built a synchronized write-back buffer cache, reducing disk I/O operations by approximately 60% for concurrent file benchmarks.
- Architected a virtual memory subsystem with demand paging, enabling the execution of user programs 2x larger than physical RAM.

Reinforcement Learning Game Agent — June 2024

- Developed an AI agent to play the game Coup, implementing a Q-learning algorithm that achieved a >90% win rate against random-action opponents.

Rock Climbing ML Grading System | *Python, PyTorch, YOLOv5* — May 2024 - June 2024

- Engineered a computer vision pipeline using YOLOv5 to grade climbing routes, achieving 80% accuracy.

Slide Social (iOS App) | *Swift, UIKit, Algorithms* — June 2023 - Sep 2023

- Launched a full-featured social platform on the iOS App Store, handling user auth, media feeds, and social graphs.

Skills

Languages: Go, TypeScript, JavaScript, C++, C, Python, SQL, Swift

Backend & Systems: Docker, Git, Linux/Unix, WebRTC, Firebase, PostgreSQL

Frontend: Next.js, React, SwiftUI

Cloud: AWS, Azure, Google Cloud Platform