

# ERIC CUI

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## Education

### Stanford University

September 2023 – June 2027

B.S. Computer Science and Electrical Engineering

GPA: 3.8/4.0

## Relevant Coursework

- CS106B: Programming Abstractions
- CS161: Design and Analysis of Algorithms
- CS129: Applied Machine Learning
- CS107: Computer Systems and Organizations
- CS109: Probability for Computer Scientists
- CS111: Operating Systems
- CS238: Decision Making Under Uncertainty
- CS231N: Deep Learning for Computer Vision

## Professional Experience

### Amazon Web Services

June 2025 - Present

Software Development Intern

Seattle, WA

- Software development intern working on cryptographic SDKs for exposing AWS CloudHSM functionalities
- Developing post-quantum cryptography support and CLI tools for multi-language SDK families

### Wise-Sales

December 2024 - March 2025

Software Engineering Intern

Palo Alto, CA

- Developed CRM automation pipelines with agentic AI and worked on graphical application interfaces
- Utilized Spring Boot to develop and refactor Java microservice servers and React for frontend development
- Worked with ApolloAPI, MySQL, and StripeAPI to create and maintain client prospecting databases and user profiles

### Logistics Plus

June - September 2024

Software Engineering Intern

Erie, PA

- Utilized ASP.NET Core to develop, maintain, and refactor 12+ API services and webhooks
- Built 10+ customizable data models for client integrations and communication pipelines with warehousing systems
- Explored AI integrations using Azure ML Studio including predicting seasonal warehouse orders and receives

## Technical Skills

**Languages:** Python, C, C++, C#, Java, JavaScript(XML), TypeScript(XML), HTML/CSS, Julia

**Developer Tools:** GitHub, Cursor, AWS, HPC, Jira, Vercel, Docker, MongoDB, GitLab, Cloudflare

**Frameworks:** PyTorch, TensorFlow, Next.js, Python Flask, PostgreSQL, Spring Boot, ASP.NET Core

## Projects

### Finetuning Pretrained Models for Compressed Dermatology Analysis | PyTorch, EC2, W&B

June 2025

- Engineered a medical image classification pipeline using PyTorch to finetune DINOv2 and ViT architectures
- Developed a data augmentation framework with JPEG compression, Gaussian blur, and color quantization
- Built an automated Weights & Biases integration for experiment tracking and performance metrics

### Predicting League of Legends Match Trajectories Using Stochastic Matrices | Jupyter Notebook

March 2025

- Architected a discrete-time Markov chain model to quantify LoL game state transitions and predict match outcomes
- Implemented a wrapper for Riot Games' endpoints, handling concurrent requests and rate limiting for match data
- Engineered a real-time data processing pipeline for multivariate time series analysis of game state transitions

### TreeTrash: Stanford TreeHacks 2025 | Vision Models, OpenCV, OpenAI API, Next.js

February 2025

- Most Creative Use of OpenAI API Stanford TreeHacks 2025 2<sup>nd</sup> Prize
- Led a team in creating a CV pipeline for identifying and analyzing incorrectly sorted waste items
- Leveraged YOLOv8 for real-time object detection and OpenCV for image preprocessing, including noise reduction
- Utilized GPT-4o for waste classification, Perplexity AI for impact research, GPT-4o-mini for structured data transformation and report generation, and Gemini Pro to post-process Vespa.ai RAG outputs

### 2048 with Deep Behavioral Cloning | Python, PyTorch, Google Colab

December 2024

- Led a team in implementing game scaffolding and a custom Monte Carlo Tree Search algorithm for the game 2048
- Developed a pipeline for using expert data generated by MCTS to train a deep behavioral cloning neural network
- Jointly wrote a research paper detailing experimental methodology and research findings

### Stanford Scheduler | Python, GitHub, React, MongoDB

September 2024

- Utilized Z3Py to build a constraint-based 4-year program course scheduler subject to degree and user constraints
- Designed data models and an object-oriented Z3Py Solver configuration backend with Python Flask API endpoints
- Built a user-specific React frontend to interface with Flask endpoints and a MongoDB Atlas database