# Eric Nguyen

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## EDUCATION

**University of Washington, Paul G. Allen School of Computer Science**          Graduation: December 2025

*B.S Computer Science, Washington State Academic RedShirt (STARS) program (**Dean's list**)*          *GPA: 3.54*

## EXPERIENCE

**Global Infrastructure Software Engineer Intern**          June 2025 – August 2025

*American Express*          *Phoenix, Arizona*

- Tested and optimized **Terraform Enterprise (TFE)** onboarding modules for **American Express** internal teams - identified a critical 2-step deployment bottleneck and an optimization in the clusters' security access schema, leading to schema restructuring and an integrated **CI/CD solution** that improved developer workflow efficiency and is projected to cut customer overhead by $3\times$ across enterprise **Kubernetes infrastructure**
- Authored comprehensive onboarding documentation in **Confluence** used company-wide - Created standardized deployment guide enabling internal development teams to efficiently deploy applications to **GKE clusters** using **ArgoCD**, **Vault**, and enterprise security protocols
- Extended **GTM Terraform provider** source code in **Go** for multi-cloud compatibility - Modified AWS-only codebase to support **GCP resources**, enabling cross-cloud infrastructure management across American Express's hybrid cloud environment

**Quality Assurance Software Engineer (AI Model Evaluation)**          May 2024 – May 2025

*Scale AI*          *San Francisco, California (Remote)*

- Promoted from **Prompt Engineer** to **QA Reviewer** after **6 months**; led quality assurance for **AI training datasets** used in **global model development**, ensuring outputs met strict **project specifications**.
- Achieved **Oracle status** - **top 5% performance company-wide** - for delivering **expert-level evaluations** across **complex reasoning**, **coding**, and **conversation tasks**.
- Designed and evaluated prompts that intentionally challenged models to fail at specific tasks (**math reasoning**, **code generation**, **website development**) to improve **model robustness** and create **correction examples**.
- Evaluated **AI-generated websites** for critical **UX** and **functionality gaps**, helping models better emulate **frontend developer behavior** using **HTML**, **Tailwind CSS**, and **JavaScript**.
- Designed **coding failure tests** in **Java**, **Python**, and **Go** by prompting models to generate classes/objects and ensuring intentional failure points for **training data creation**.

**Lead Calculus Teaching Assistant & Tutor**          September 2022 – Present

*University of Washington*          *Seattle, Washington*

- Promoted to **Lead Teaching Assistant** for **Calculus II** workshops after demonstrating exceptional tutoring performance and strong student outcomes.
- Helped dozens of students pass the calculus series, achieving an overall **grade increase of 20%** through personalized teaching methods.
- Led weekly workshops of up to 20 students while providing one-on-one tutoring sessions to reinforce student comprehension.

## PROJECTS

**PianoVision - AI Piano Transcriber** | *React, TypeScript, FastAPI, MongoDB, Basic Pitch ML, FFmpeg*

- Developed a full-stack **AI-powered piano transcription application** using **Basic Pitch ML model** to convert audio recordings into MIDI and generate interactive Synthesia-style piano roll visualizations with **FastAPI** and **Motor AsyncIOMotorClient**.
- Engineered a **React TypeScript frontend** with **Framer Motion** animations, file upload handling, and secure user authentication flow; implemented **MongoDB Atlas** integration for persistent user data and tutorial storage.
- Built robust **FastAPI backend** with **FFmpeg** audio processing, **Pygame**-based video frame generation, and **MIDI** file processing to create piano tutorials with tutorial playback capabilities.

## TECHNICAL SKILLS

**Languages**: Java, Python, C/C++, SQL (SQLite), Typescript, JavaScript, HTML/CSS, Golang
**Frameworks**: React, Node.js, JUnit, Angular, CI/CD integration, Rest APIs, Spring, Express, FastAPI
**Developer Tools**: Git, VS Code, Azure, GCP, MongoDB, Visual Studio, IntelliJ, Eclipse, Linux