Nathaniel Marquez

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EDUCATION

Carnegie Mellon University, School of Computer Science **Pittsburgh, PA**
B.S. Artificial Intelligence • *Dean's List with High Honors* **August 2020 - December 2023**

Coursework: Advanced Natural Language Processing • Deep Reinforcement Learning • Human-AI Interaction • Search Engines
Autonomous Agents • Designing AI Products • Human-Robot Interaction • Systems (C) • ML • Theoretical CS
Modern Regression • Functional Programming • Parallel & Sequential Data Structures/Algorithms • Python

EXPERIENCE

Netflix **Los Gatos, CA**
Software Engineer, Search and Discovery Innovation **July 2024 - Present**
- Collaborate with ML, Frontend and Platform teams to build distributed systems and services for discovery experiences
- Developing event transition for the NFL Christmas Event, mitigating thundering herd for **tens of millions** of concurrent users
- Own observability efforts across multiple discovery surfaces for Netflix Live Titles to ensure discovery health
- Led the development for Live Title recommendation fallbacks -- the contingency plan if traditional recommendations fail

Software Engineer Intern, Search and Recommendation - Innovation Team **Summer 2023**
- Increased speed of integration for new products/features by **200%** through working on a service to mock recommendations
- Impacted over **500,000 automation tests** to cross-functionally serve UI partners

Meta **Menlo Park, CA**
Software Engineer Intern, In-Stream Ads Team **Summer 2022**
- Led the effort to create a new ad format for Facebook Reels using PHP/C++/React, projected to generate **$4M** by the EOY
- Project was deemed a "high-impact, top company priority", projected to **increase team revenue by 2%**
- Coordinated with **4 different teams** across **3 codebases** to enable backend ad creation and frontend client/advertiser UI

Fanhouse **Remote**
Software/Machine Learning Engineer Intern **Summer 2021**
- Developed full-stack web features with React/Node.js for the social media platform which processed **$2M** during my tenure
- Designed and implemented a recommendation system experienced by over **65,000 users** via a weighted social graph
- Single-handedly trained several machine learning models for content moderation of over **30,000 monthly photo uploads**

Carnegie Mellon University, School of Computer Science **Pittsburgh, PA**
Teacher's Assistant for 07-180: Concepts in Artificial Intelligence **Spring 2022, Spring 2023**
- Worked with 10 TAs to run a relatively new course of 75 students, covering topics such as Search, MDPs, RL, DTs, and NNs
- Designed and taught 2 new recitations, held weekly office hours, and proctored group discussions during lectures

Teacher's Assistant for 15-112: Fundamentals of CS **Spring 2021**
- Worked on a team of 50 TAs to run a class of 300 students, made up of both undergraduate and graduate students
- Led recitation of 25 students 3 times a week, graded quizzes/tests, held office hours and tutored individual students

PROJECTS

Soupy (soupy.app) **Fall 2025**
- A novel AI interface that feels like an interactive video essay. Generate instantaneous 3D animations and narrations.

WriteAway (writeaway.fun) **Bolt.new World's Largest Hackathon • Summer 2025**
- AI Native Document Editor and Agent. One of 14 out of 128,000 participants chosen to present my project via live stream.

Ploopy (ploopy.framer.ai) **Buildspace Hackathon • Winter 2024**
- A cute and adorable therapy companion built in a React Native mobile app. Leverages RAG and LLMs for daily inspiration.

Acadia AI, Co-Founder (acadia-ai.com) **January - April 2024**
- Solving data-interpretability for LLMs via embedding based methods. Received acqui-hire offer from a Series A company.

Chess Moves For Itself: Autonomous Chess Board Robot **CMU Build18 Hackathon • Spring 2023**
- Developed the Main Controller FSM on a Raspberry Pi and utilized Google Voice and LLMs to incorporate voice controls.

SKILLS

Languages: Java • Python • C • JavaScript/TypeScript • SML (Functional) • HTML/CSS
Frameworks/Tools: Git • MVC/OOP • React • PyTorch • Next.js • Django • Node.js • SpringBoot • AWS • MCP