

Nathaniel Marquez

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EDUCATION

Carnegie Mellon University, School of Computer Science

B.S. Artificial Intelligence, Concentration in Human-Computer Interaction

Dean's List with High Honors

Pittsburgh, PA

Dec 2023

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

EXPERIENCE

Netflix

Software Engineer Intern, Search and Recommendation - Innovation Team

Los Gatos, CA

Summer 2023

- Designed and successfully proposed **two new features** to be integrated into the recommendation system ecosystem
- Increased speed of integration for new products/features by **200%** through working on a service to mock recommendations
- Worked across **6 Java Spring Boot services** and coordinated across **3 teams**
- Impacted over **500,000 automation tests** to cross-functionally serve UI partners

Meta

Software Engineer Intern, In-Stream Ads Team

Menlo Park, CA

Summer 2022

- Led the effort to create a new ad format for Facebook Reels using PHP/C++/React, expected to generate **\$4M** by the EOY
- Project was deemed a “high-impact, top company priority”, expected to **increase team revenue by 2%**
- Coordinated with **4 different teams** across **3 codebases** to enable backend ad creation and frontend client/advertiser UI
- Organized an intern project showcase for **5 interns** across **2 teams**, presented our projects to **1000+ employees** via livestream

Fanhouse

Software Engineer Intern

Remote

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

Teacher's Assistant for 07-180: Concepts in Artificial Intelligence

Pittsburgh, PA

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

The Effects of Domain Adaptive Pre-Training and

11-711: Advanced Natural Language Processing • Fall 2023

Model Size on Fine-Grained Binary Humor Detection ([See here](#))

- Advanced binary humor detection through Domain Adaptive Pre-Training (DAPT) to optimize smaller language models and provide performance insights for resource-constrained research.

FITTD, Co-Founder

March - September 2023

- Aimed to solve reverse-logistics for fashion apparel, processed **\$3.5k** in first two weeks of launching
- Conducted a user study involving 600+ students to gauge sentiments and shopping habits of college students

Chess Moves For Itself: Autonomous Chess Board

CMU Build18 Hackathon • Spring 2023

- Developed the Main Controller FSM on a Raspberry Pi and utilized Google Voice to incorporate voice controls

TerraBot

15-482: Autonomous Agents • Fall 2022

- Programmed an autonomous greenhouse using ROS (rospy), FSMs, sklearn, and OpenCV to grow lettuce and radishes

PogPong: 3D Ping Pong Game ([Devpost](#))

15-112: Intro to CS Term Project • December 2020

- Developed a basic 3D graphics engine in Python, and leveraged OpenCV to implement motion tracking camera controls

SKILLS

Proficient Languages: Java • Python • C • JavaScript/TypeScript • SML (Functional) • HTML/CSS

Familiar Languages: C++ • MATLAB • PHP

Other Development Skills: Git • Wireframing • MVC/OOP • React • PyTorch • sklearn • Django • Node.js