

# Nathaniel Marquez

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## Education

### Carnegie Mellon University, School of Computer Science

Pittsburgh, PA

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

Class of 2024

Dean's List with High Honors (Spring 2022)

**Current Coursework:** Systems • Machine Learning • Autonomous Agents (IoT)

**Previous Coursework:** Parallel & Sequential Data Structures/Algorithms • Functional Programming • DS/Algs in C • AI • Human-Robot Interaction • Cognitive Sci & AI • Probability • 3D Calc • Lin Alg • Discrete Math

## Work Experience

### Meta/Facebook

Menlo Park, CA

Software Engineer Intern, In-Stream Ads Team

Summer 2022

- Lead the effort to create a new ad format for Facebook Reels, coordinating across **three different teams**
- Project was deemed a "high-impact, top company priority", expected to **increase team revenue by 2%**
- Developed across **three codebases** to enable backend ad creation, as well as frontend client and advertiser UI
- Organized an intern project showcase for **5 interns** across **2 teams** where I presented my project to **150+ employees**
- Documented my work through engineering plans, investigation documents, and wiki pages

### Fanhouse

Remote

Software Engineer Intern

Summer 2021

- Developed full-stack web features for the social media platform which processed over **\$2M** during my tenure
- Implemented a weighted social graph experienced by over **65,000 users** for content recommendation
- Single-handedly trained the neural network for the content moderation of over **30,000 monthly photo uploads**
- Brainstormed marketing and engineering experiments with CEO, CTO, and CMO to increase revenue

### Carnegie Mellon University, School of Computer Science

Pittsburgh, PA

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

Spring 2022

- Worked with **10 TAs** to run a relatively new course of **75 students** (fourth semester of the course being taught)
- 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
- Lead recitation of **25 students 3 times a week**, graded quizzes/tests, held office hours and tutored individual students
- Organized an optional lecture with 2 TAs to teach **60 students** about game AI, search algorithms, and decision theory
- Judged and ran a school-wide hackathon, Hack112, involving **200+ students**

## Projects

### PogPong ([Devpost](#))

15-112 Term Project • December 2020

- Programmed a 3D pong game in Python using OOP, TkInter, and Carnegie Mellon's MVC framework
- Implemented OpenCV for "camera controls", giving users the option to control the paddle with their hand

### Market Spoofing Detection ([Devpost](#))

Citi Bank x CMU • October 2020

- Created an ML classifier with PyCaret to classify "spoofs", orders that illegally influence stock market price

## Activities

### Youtube Channel ([See Here](#))

June 2020 - Present

- Documents my experiences at Carnegie Mellon and gives college application advice
- Edits, shoots, writes, and produces each video, with a total viewership of **over 90,000 views**

### Carnegie Mellon Filipino Student Association

August 2020 - Present

Treasurer

- Promotes the Filipino Community through cultural events, guest lectures, and celebrations
- Worked on a team of other fundraising ambassadors to promote the club and received donations from **44 donors**

## Skills

**Proficient Languages:** Python • C • JavaScript (React, Node.js, Typescript) • SML (Functional)

**Familiar Languages:** C++ • Java • MATLAB • PHP

**Other Development Skills:** HTML/CSS • Git • Wireframing • MVC/OOP • TensorFlow