An Nguyen Tran

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EDUCATION

California Institute of Technology (Caltech)

Bachelor of Science in Computer Science • Class of 2023 • GPA 4.15 / 4.00

General CS

Programming Methods Software Engineering Computing Systems Decidability and Tractability Machine Learning
Learning Systems

Graphics Programming
Intro Graphics Laboratory

Institute Core

Calculus: Single and Multi-Variable Intro to Linear Algebra: Analytical Classical Mechanics and Electromagnetism

Differential Equations: Practical

SKILLS

Programming Languages C, C++, Rust, Python, Java, Kotlin Front-End Development

Node.js, JavaScript/TypeScript, HTML, SCSS

Tools & Frameworks

Unix, Git, TensorFlow, Webpack, ReactJS

EXPERIENCE

Summer Undergraduate Research Fellow

Caltech: Powell-Booth Laboratory for Computational Science

June 2020 - August 2020

- · Co-designed a new full-stack WebSocket protocol to replace the group's previous prototype, achieving performance increases.
- Created a new backend for the group's prototype of a remote educational platform with documentation, ensuring future maintainability.
- Created a multiplatform web frontend built using TypeScript, Webpack, and ReactJS.
- Developed the backend using Rust and Actix and deployed on Amazon Web Services and the private university cluster.

PROJECTS

Celltomata

Hacktech Hackathon March 2020

- Implemented the backend for a multiplayer combination of Conway's Game of Life and .io games.
- Created and developed the WebSocket backend and game logic in Rust, and frontend interface with Node. JS and HTML/CSS/JS.

Lovecraft-LSTM

github.com/Avarel/Lovecraft-LSTM

January 2020

- Developed an LSTM model using Python and TensorFlow to learn and generate texts from 18 Lovecraft sample texts.
- · Computed, trained, and used the model online using 60 TPU/GPU cloud hours of Google Collaboratory.

Octave (Formerly Gnar)

github.com/Stardust-Discord/Octave

September 2016 – August 2019

- Wrote an open-source Discord bot in Java and Kotlin, using JDA and Lavaplayer, serving over 100,000+ Discord servers.
- Handled and streamed OPUS sound packets from 5 video platforms to Discord voice channels to deliver a premium music experience.

EXTRACURRICULARS

Caltech Robotics Club

California Institute of Technology • Software Member

October 2019 - Present

- Implemented robotic submarine detectors using a framework built on ROS Melodic, PyTorch, and YOLOv3.
- Collaborated with the mechanical, electrical, and business team in the CRT club.

ACM-ICPC Competition

Riverside Community College • Competitor

November 2019 - Present

- Competed in the regionals ICPC programming competition in a team of three students.
- Placed 31 out of 88 on freshman year.