Victor Tran

Email: trannvictor@gmail.com
Personal Website: https://victorvantran.github.io | GitHub: https://github.com/victorvantran
LinkedIn: https://www.linkedin.com/in/victor-tran-883498209 | Phone: (714) 464-9159

Projects

(Video demonstrations are on my personal website)

Bop-It

December-February 2019

- Programmed an ATMega32 microcontroller to imitate the game, *BOP-IT!*
- Samples player input signals when performing actions on a tilt sensor, a button, a potentiometer, and an analog joystick using a built-in ADC
- Relayed feedback through audio and visual cues from a speaker and LCD display

Project Scarecrow

November-February 2020

- Senior design project, building an autonomous surveillance system using the Google Coral Development Board and its tensor processing unit (TPU)
- Retrained a neural network model using datasets of tens of thousands of dog/cat pictures
- Integrate multiple hardware such as a Bluetooth module, microcontrollers, a stepper motor, speakers, and high-powered LEDs
- **Project leader** to a team of four undergraduates
    - Created and presented posters, allocated tasks to members, and set milestone deadlines
    - Arranged weekly meetings with a team mentor for progress reports

Tile-Based Platformer Procedural World

December-March 2021

- Programmed a 2D platformer built upon the barebones, open source PixelGameEngine
- Practiced Object-Oriented Design and Polymorphism
- Applied multithreading techniques to write chunks of world data to an SQLite database file
    - Reduced database size down by 98.3% using a custom palette system
- Implemented a variety of algorithms and data structures such as double buffering, AABB physics, QuadTrees, shadow casting, and Perlin Noise

Game/Render Engine

February-2021

- Programmed a game/render engine using an OpenGL framework (GLFW)
- Able to load Wavefront Object models using the ASSIMP library
- Written shader programs that simulate the Phong Lighting Model for directional, point, and spot light sources

Skills

Software

- C++, Python, Java, C
- OpenGL
- SQLite
- Visual Studio, Vim, Eclipse, Verilog
- Git

Hardware

- AtMega32 Microcontroller
- Arduino
- Google Coral Development Board

Career Objective

I want to apply my knowledge of high and low-level programming to create integrated systems that tangibly interact with people. I look forward to gaining industry experience and knowledge collaborating with fellow Computer Scientists, Engineers, and other disciplines.

Education

University of California, Irvine Irvine, CA
Bachelors of Science in Computer Science and Engineering Graduated: March 2020
GPA: 3.92/4.00 (*magna cum laude*)

Coursework

- Programming in Python
- Programming in C++
- Boolean Algebra and Logic
- Discrete Mathematics for Computer Science
- Introduction to Linear Algebra
- Multivariable Calculus
- Elementary Differential Equations
- Data Structure Implementation and Analysis
- Design and Analysis of Algorithms
- Introduction to Artificial Intelligence
- Organization of Digital Computer Architecture
- Computer Network Architecture
- Embedded Software