

Education

Tufts University

Computer Science (BS), May 2019

GPA: 3.94

Skills

- Languages: Python, C, C++, JavaScript, HTML, CSS, Matlab
- Frameworks: Qt, PyQt, jQuery, Node.js, Bootstrap, Twisted, TensorFlow
- Softwares: Git, valgrind, GDB, pylint
- OS: Linux, OS X, Windows

Experience

EditShare, LLC

Software Engineering Intern

Watertown, MA

May 2017 - August 2017

- Implemented a new storage solution based on a Linux file system
- Implemented a server API using Twisted Perspective Broker framework to handle Remote Procedure Calls (RPCs)
- Created a cross-platform Graphical User Interface application using the Qt and PyQt frameworks allowing users to make RPCs to the server API

Tufts University Human - Robot Interaction Laboratory

Research Intern

Medford, MA

October 2016 - April 2017

- Implemented the Python version for the neural field model for real time speech perception project
- Re-implemented the neural field model program using TensorFlow for better scalability and efficiency given the initial implementation of the model in C++
- Doubled the maximum size of the sound data set processable by the model by using sparse tensors
- Modularized the implementation of the neural network by utilizing tensor slicing and joining, allowing the model to support any given number of neural field layers
- Participated in discussions on how to improve the prediction accuracy of the model

Hanoi University of Science High School for Gifted Students (HUS HSGS)

Computer Science Olympiad Team Trainer

Hanoi, Vietnam

May 2016 - August 2016

- Prepared the HUS HSGS Computer Science Olympiad Team, one of the best in Vietnam, for national and international competitions such as the International Olympiad in Informatics
- Taught how mathematics concepts and theorems such as the Hall's marriage theorem or the invariant principle can be applied in computer science
- Introduced the students to various advanced data structures, such as Binary Indexed Tree and Interval Tree, and their applications

Projects

Gomoku AI

Python and C++ program

- Built two different Artificial Intelligence (AI) programs that can play the game Gomoku
- Implemented the first AI using a move score calculation rule based on a defensive strategy, which followed 80% of predicted moves
- Implemented the second AI using the Minimax Algorithm to determine the best possible move under the assumption that the opponent also played an optimal game
- Researched how a third AI can be implemented using deep learning

Trailer Nailer

Web application

- Built a web game that allows players to test their movie recognition ability by watching trailers
- Stored information of roughly 200 movies from 5 different genres using MongoDB, and implemented a web server using Node.js to respond to movie information queries
- Embedded in-game movie trailer videos through YouTube Player API
- Enabled players to log in to Facebook, introduce the game and send challenges to friends using Facebook API

Image Compressor and Decompressor

C program

- Used quantization of pixels and bit-level manipulations to compress each 2x2 pixel block into a 32-bit word.
- Reduced (on average) 66.7% in image size in compression
- Restored (on average) 98.2% of the original image in decompression

Scanned Document Black Edge Remover

C program

- Identified black edge pixels in the image of a scanned document using depth first search
- Replaced black edge pixels with white pixel for better image quality