Minh D. Nguyen

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Education

Tufts University
Computer Science (BS), *May 2019*
GPA: 3.94, *Dean's List*

Skills

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

Experience

EditShare, LLC   **Watertown, MA**
Software Engineering Intern   *Summer 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   **Medford, MA**
Research Intern   *Fall 2016 - Spring 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)   **Hanoi, Vietnam**
Computer Science Olympiad Team Trainer   *Summer 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 Inteligence (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.