DANIEL MIN

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EDUCATION

University of Toronto

BASc in Computer Engineering *Sept 2014 ~ June 2019*

- Relevant Coursework: Algorithms and Data Structures, Operating Systems, Computer Security, Artificial Intelligence, Signal Processing, Probability, Databases, Software Design, Computer Networks

SKILLS

- **Programming Languages:** C++, Java, Python, C, PostgreSQL, XML, Verilog , NIOS II Assembly, HTML, CSS, JavaScript, MATLAB
- **Tools:** Git, Bash, Subversion (svn), Visual Studio, NetBeans, MATLAB, Android Studio, ROS, Eclipse, Code::Blocks, ModelSim, Quartus, MultiSim

WORK EXPERIENCE

Software Engineering Intern, Magna International, Inc., Magna Electronics Brampton, ON

(C++, C, MATLAB, Python) *May 2017 ~ June 2018*

- Refactored software modules to streamline dataflow for multiple clients
- Developed a parking line detection module using image processing algorithms. This sped up the process for line detection by 50%
- Built a software module that autonomously detects empty parking spots. State machine was used with input data from camera images and ultrasound sensors. It was found to have improved successful parking rate by 10%
- Developed an internal GUI application using Tkinter framework in Python to make automated test runs easier to analyze. Time spent in analysis was reduced by half

Self-Driving Car Research Intern, Magna International, Inc., Magna Electronics Brampton, ON

(Python) *June 2018 ~ August 2018*

- Utilized ROS environment to playback vehicle driving data and convert to different image formats to use as inputs to convolutional neural network (CNN)
- Trained a CNN, implemented based on NVIDIA and Udacity's open-source models, using internal driving data with tensorflow, keras, and CUDA for GPU support to speed up training time
- Analyzed errors between predicted steering angles vs. ground truth steering angles and reported back to the team for improvements on future research and development cycles

PROJECTS

Music Player Based on Emotion Detection (2019)

- Built a music player that plays music based on the user's emotion using python, openCV, tensorflow, and open-source convolutional neural network (CNN) models with 2 team members
- Tested the CNN model with different training sets, model parameters, and architectures for highest accuracy

Mapping Application (2017)

- Developed a geographical information application using C++11 that is targeted towards tourists by leading 2 other team members
- Used OpenStreetMap API and data structures from STL to speed up runtime. Went through a process of software profiling to maximize efficiency and performance
- Implemented the shortest path finding algorithm starting with greedy solution and switching to dijkstra and A* algorithm to improve the performance after iteration of testing, speeding up the computation time of pathfinding

KESA Application (2016)

- Developed an android social application that allows members of the Korean Engineering Students' Association to interact and communicate in Java and Android Studio
- Utilized the firebase database API to store and fetch user data

Daniel Min Website

- Built a website using HTML/CSS. Can be accessed at: https://dan09781.github.io/