Daniel **Min**

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Education

University of Toronto *Sept 2014 - June 2019*

BASc in Computer Engineering

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

Skills

Programming Language

- C++, Java, Python, C, PostgreSQL, XML, Verilog , NIOS II Assembly, HTML, CSS, JavaScript, MATLAB

Tools

- Git, Bash, Subversion, Unix, Visual Studio, NetBeans, MATLAB, Android Studio, ROS, Eclipse, ModelSim, Quartus, MultiSim

Experience

Software Engineering Intern (C++, C, MATLAB, Python, XML) *Brampton, ON*

Magna International, Inc., Magna Electronics *May 2017 - June 2018*

- Built flexible and extensible software systems for autonomous parking and emergency braking features in vehicles with the use of plugin architecture
- Reduced runtime of parking line detection by 20% while improving successful detection rate by 33% through implementing an image processing algorithm based on linear regression and template matching
- Introduced camera support for the autonomous parking feature by incorporating image-based parameters into the finite state machine and establishing new states controlled by camera inputs
- Used kinematic bicycle model for modelling instantaneous path of a vehicle for emergency braking applications
- Reduced the time spent in analyzing results from automated test runs by developing an internal GUI application, using Tkinter framework, that automatically organizes and writes data onto csv files

Self-Driving Car Research Intern (Python) *Brampton, ON*

Magna International, Inc., Magna Electronics *June 2018 - August 2018*

- Utilized ROS environment to playback vehicle driving data and gather images to use as inputs to a convolutional neural network (CNN)
- Trained a CNN, implemented based on NVIDIA and Udacity's open-source models, using internal driving data
- Used 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

Pathfinder (Java) *2019*

- Built an application for visualizing pathfinding algorithms using Swing
- Implemented Dijkstra and A* algorithms with various user-controlled parameters

Music Player Based On Emotion Detection (Python) *2019*

- Built a music player that outputs a selection of music based on detected user emotion using openCV, Tensorflow, and open-source convolutional neural network (CNN) models
- Tested the CNN model with different training sets, model parameters, and architectures for highest accuracy

Mapping Service (C++) *2017*

- Built a mapping service for Toronto, London, New York, and Moscow with OpenStreetMap API by leading 2 other team members
- Reduced the time to search for intersections and public transportation routes by 45% by profiling the data structures and algorithms used
- Implemented shortest path finding algorithm, starting with greedy solution and optimizing to Dijkstra and A* algorithm

KESA Social Network (Java) *2017*

- Used Android Studio to build a social network platform for members of the Korean Engineering Students' Association
- Utilized the Firebase database API to store and fetch user data

Daniel Min Website (HTML/CSS) *2017 - present*

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