Lang Su

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EDUCATION

UNIVERSITY OF WATERLOO
BCS in Computer Science
Sep 2015 - Aug 2019 | Waterloo, ON

CERTIFICATIONS

UDACITY
Self-driving Car Nanodegree
Jan 2019 - Present
Machine Learning Nanodegree
Mar 2018 - Sep 2018

PROJECTS

ADVANCED LANE DETECTION
Feb 2019 - Mar 2019 | Computer Vision
Created a robust image processing pipeline using OpenCV for identifying highway lanes in an image or video

TRAFFIC SIGN RECOGNITION
Jul 2018 - Aug 2018 | Deep Learning
Achieved 99.2% accuracy on the 62-class Belgium Traffic Sign Dataset.

DEEP HARMONY
Oct 2018 - Dec 2018 | Deep Learning
Implemented a music generator using RNN encoder-decoder model that composes harmonies based on melodies.

CUSTOMER CLUSTERING
Jun 2018 | Machine Learning
Trained an unsupervised learning model that clusters customers according to shoppers spending pattern.

SKILLS

PROGRAMMING
Language:
C • C++ • Python • Java • JavaScript
C# • Matlab • R • Bash • LaTex
Machine Learning:
Tensorflow • Keras • PyTorch
Sci-ki Learn • OpenCV
Backend
Node.js • Express.js • MySQL
PostgreSQL • AWS • Git • ROS
Frontend
HTML • CSS • jQuery • React
React Native • d3.js • phaser.js

SUMMARY

A solution-oriented computer science student with strong background in Machine Learning and 1+ years of hands-on experience developing deep learning models to solve challenging real world problems. Seeking full-time junior/intermediate developer role with focus in A.I. starting in September.

EXPERIENCE

PERCEPTION TEAM LEAD | WATOnomous
May 2019 - Present | Waterloo

- Responsible for leading the perception team to solve a wide range of tasks including 3D object detection, object classification, and roadline detection to compete in the SAE AutoDrive challenge.
- Preprocessed the Berkeley DeepDrive dataset and Fine-tuned an SSD model to detect pedestrian and cyclists.
- Performed quality testing using C++ on Robot Operating System (ROS) of a real self-driving car.

RESEARCH ASSISTANT | Cognitive Autonomous Driving Lab
Jan 2019 – Present | Waterloo, ON

- Research based on autonomous vehicle perception with focus in affordance learning approach using convolutional neural network.
- Designed algorithms that create affordance labels from ground truth.
- Constructed and trained neural network models on large-scale dataset using Tensorflow, Keras and Python.
- Constantly improved model accuracy by tuning parameters and applying adaptive learning technique.
- Conducted and reported performance comparison among multiple CNNs.

SOFTWARE ENGINEER INTERN | TRU Simulation
May 2018 – Aug 2018 | Montreal, QC

- Reduced software client-side response time from 25s to 1s by completely redesigning display mechanism (C++/Cli .Net).
- Enriched starred project usability and user-friendliness by implementing command line support tool using C++.
- Developed Python Flask server that supports company-wide concurrent library build, which successfully prevents previously-frequent version number error.

May 2017 – Aug 2017 | Montreal, QC

- Built a company-scale search engine from scratch that significantly improved hundreds of engineers search efficiency.
- Consistently worked on Node.js server development with Rest API support, MySQL database design, and a multi-functional JavaScript web UI with embedding data visualization.

PUBLICATION

C. Sun, L. Su, S. Gu, J. M. U. Vianney and D. Cao. Comparison of CNN based Methods for Affordance Learning in Autonomous Vehicles. Proceedings of the 2019 IEEE International Conference on Intelligent Transportation Systems(ITSC). IEEE, 2019. [Submitted]