Aswin Visva

http://aswinvisva.me
aavisva@uwaterloo.ca
github.com/aswinvisva

SKILLS

Programming Java, Python, C++, C#, R, HTML5, JS, CSS3, SASS, Ruby on Rails, SQL
Libraries TensorFlow, Keras, OpenCV, NumPy, Scikit-learn, Pandas, Matplotlib, spaCy, Bokeh, Flask

EXPERIENCE

Machine Learning Research Student | Dr. John-Paul Oliveria, Stanford University — March 2020 – Present

- Developing an unsupervised ML algorithm to discover heterogeneity of cellular microenvironments
- Architecting and drafting a manuscript for novel medical image feature extraction techniques

Machine Learning Developer Intern | BlackBerry Ltd. — January 2020 – April 2020

- Spearheaded the development of a ML pipeline to predict failures in software logs **with over 85% accuracy**
- Productionized anomaly detector capable of efficiently processing **gigabytes of data in under 1 hour**
- Developed state-of-the art NLP-DNN algorithms for supervised anomaly detection with TensorFlow and Keras
- Architected online clustering algorithms for unsupervised outlier detection with Scikit-learn

Software Engineering Intern - Computer Vision | PinchVR Inc. — May 2019 – August 2019

- Developed an Android NDK script in C++ to handle native camera acquisition and created an algorithm to dynamically set exposure parameters, such as shutter speed and sensor sensitivity, minimizing motion blur and thereby **improved tracking accuracy by 30%**
- Built a testing framework in C++ and OpenCV to determine the tracking accuracy of computer vision algorithms
- Led the development of a VR mobile application built with Unity in C# and published to the App Store for IOS

Software Developer Intern | Process Fusion Inc. — July 2018 – August 2018

- Developed multiple PowerShell scripts to perform health checks on specific applications and address identified gaps such as logging events, verifying TCP ports and checking application turnaround time

PROJECTS & ACTIVITIES

Computer Vision Developer | WATonomous Self-Driving Car Design Team, UW — January 2020 – April 2020

- Architected a CNN-LSTM autoencoder for semantic segmentation of lane lines **achieving a F-Score of 90%**
- Leveraged OpenCV library in C++ to aid an autonomous vehicle in detecting road signs from a camera feed
- Drafting a literature review for 3D object detection methods using LIDAR point clustering

ConvoBuddy | QHacks 2019 - **Best Use of Google Cloud Platform** — February 2019

- Developed an IOS app using Swift and Firebase to help individuals with Autism identify emotions
- Implemented packaged ML models for emotion identification from images using Google Cloud Vision API

BikeSafe Helmet | U of T EWB 2018 – **Gold Medal** & Toronto Science Fair 2018 – **Bronze Medal** — May 2018

- Built a bike helmet leveraging the OpenCV library and the Haar Cascades classifier to detect cars on the road

Sign Language Glove | Toronto Science Fair 2017 – **Gold Medal & Charles Dyer Scholarship** — April 2017

- Led the development of a glove that translated 30 sign language gestures to speech using Java and Arduino

EDUCATION

University of Waterloo — September 2018 – May 2023

Bachelor of Applied Science: Management Engineering Co-op

- Relevant courses: MSCI 240 – **Algorithms & Data Structures**, MSCI 251 – **Probability & Statistics 1**, MATH 115 – **Linear Algebra for Engineering**, MSCI 271 – **Advanced Calculus and Numerical Methods**