Gohur Ali

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Education

University of Washington (Bothell, WA) — Sept 2016 - April 2020

B.S. in Computer Science & Software Engineering | GPA:3.73 | Annual Dean's List 2016-2018

- **Coursework:** Computer Vision, Cloud Computing, Linear Algebra, Operating Systems, Hardware, Database Systems, Data Structures & Algorithms, Software Engineering, Machine Learning, Statistics for Machine and Deep Learning

Experience

AVA.Retail.ai — Sept 2018-Feb 2019

Machine Learning Intern

- Developed an automated synthetic image data generator using Python & Blender that generated 5000 images per day
- Trained object detection ConvNet (CNN) in TensorFlow using diverse synthetic data to improve evaluation metrics
- Created support vector machine model using Scikit-Learn for object classification and detection for R&D purposes
- Worked closely with QA team to discover and resolve software defects with test-driven development

Research

University of Washington Bothell Dept. of Computer Science — Sept 2018-Mar 2019

Undergraduate Researcher | Advisors: Dr. Arkady Retik & Dr. Diala Ezzeddine

- Worked to automate & simplify job applicant skill evaluation to find ideal candidates for specific jobs by developing an NLP deep learning architecture pipeline
- Developed a novel shallow 1-D CNN architecture in TensorFlow & Keras for skill-based sentence classification with pre-trained embeddings for task-specific data (97% accuracy) which competes with deeper architectures
- Applied statistical methods and evaluation metrics with Scikit-Learn to analyze CNN results and performance

Projects

Lane & Vehicle Detection https://github.com/gohurali/Lane_Vehicle_Detection

- Calculated Hough transform lines for lanes using ROI, edge detection, and color spacing techniques in C++ OpenCV
- Trained an SVM model for classification on opensource datasets for vehicles and non-vehicles at a 96% accuracy
- Used a pyramidal scaling sliding window with non-max suppression to detect vehicles in an image frame

Financial Stock Forecast Prediction https://github.com/gohurali/Financial-Market-Prediction

- Implemented financial indicator algorithms such as simple moving average, Bollinger bands, and Ichimoku cloud for data exploration and generation with NumPy and Jupyter Notebooks
- Developed deep learning models such as Multi-layer Perceptron, LSTM, and 1D CNN in PyTorch with Tesla T4 GPU
- Deployed models to PC and Android application for on-demand inference with ONNX

Neural Style Transfer https://github.com/gohurali/Neural_Style_Transfer

- Used the pre-trained VGG19 architecture's convolutional layers as feature extractors with PyTorch
- Calculated loss for content, style and total based on ground truth features and Gramian matrices
- Utilized the loss for both content and style images to obtain the output in 2000 steps

Object Segmentation https://github.com/gohurali/Object_Segmentation

- Developed a script using Python and OpenCV with image thresholding to segment objects from background
- Developed a personal video parsing script to quickly transform video into image frames
- Resulted in 40-60% of usable image data from an input image directory

Languages & Systems

Advanced	Intermediate	Familiar
Python, Java, C#, C++, Linux	Azure, AWS, SQL, NoSQL, HTML/CSS	PHP, R, JavaScript