

# GOHUR ALI

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## Education

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### University of Texas – Austin

Sept. 2021 – June 2023

*Master of Science (M.S.) in Computer Science*

### University of Washington

Sept. 2016 – Apr. 2020

*Bachelor of Science (B.S.) in Computer Science | GPA: 3.73*

- 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

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### Tata Consultancy Services

Mar. 2021 –

*Software Engineer – Full Stack*

Seattle, WA

- Designed responsive and dynamic user interfaces with Angular from the ground up
- Developed backend REST APIs with Express.js for authentication and storage using MongoDB and Passport
- Collaborated and communicated with team on features and components to ensure quality is maintained

### AVA Retail.ai

Sept. 2018 – Feb. 2019

*Software Engineer Intern – Machine Learning*

Redmond, WA

- Developed an automated synthetic image data generator using Python & Blender that generated over 5000 unique images per day
- Trained a convolutional neural network (CNN) based on RetinaNet with single-shot learning for object detection in TensorFlow using the generated synthetic data combined with real data to improve model detection performance
- 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

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### University of Washington Bothell Dept. of Computer Science

Sept. 2018 – Mar. 2019

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

- 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 sentence classification with pre-trained embeddings which competes with deeper architectures based on standard datasets (97% accuracy)
- Applied statistical methods and evaluation metrics with Scikit-Learn to analyze CNN results and performance

## Projects

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### YOLOv2 Object Detection | Python, PyTorch, NumPy, OpenCV, Jupyter

- Developed a pipeline between the backbone 19-layer convolutional neural network and YOLOv2 layers in PyTorch to detect and classify trained objects in images
- Implemented K-Means clustering to generate K average size anchor bounding boxes found in the dataset
- Implemented a variant from the originally proposed loss function to support any number of anchor boxes

### Lane & Vehicle Detection | C++, Python, OpenCV, Jupyter

- Calculated Hough transform lines for lanes using ROI, edge detection, and color spacing techniques in C++ and OpenCV
- Trained a SVM model for classification on open source datasets for vehicles and non-vehicles at a 96% accuracy
- Used pyramid scaling sliding window to obtain bounding boxes with non-max suppression to detect vehicles

### Financial Stock Forecast Prediction | Python, PyTorch, NumPy, Pandas, Jupyter, Flask, Kivy

- Implemented financial indicator algorithms for analysis and data generation
- Developed the full machine learning pipeline with various deep learning models for performance comparison
- Deployed models to web application and Android for on-demand inference with ONNX

## Technical Skills

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**Languages:** Python, Java, C++, C#, JavaScript, TypeScript, R, Bash

**Technologies/Frameworks:** TensorFlow/Keras, PyTorch, OpenCV, Scikit-Learn, Pandas, .NET, Linux, AWS, Azure, MongoDB, Express.js, Angular, React, Node.js, GraphQL, Docker