Raahul Gupta

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OBJECTIVE

An inquisitive self-starter graduate student majoring in **Artificial Intelligence** at **U of M**, who believes in continuous learning and implementation. My interest lies in contextualizing AI for problem-solving and business impact. I aspire to continually learn and grow as a V-shaped professional by working as a Chief Data Scientist in multiple domains.

EDUCATION

University of Michigan - Dearborn — **Michigan**

Master of Science, Artificial Intelligence — *Winter 2022*

- Concentration: **Computer Vision** | GPA: 3.95 / 4.0
  - Key Modules: Computational Learning, Artificial Intelligence, Robot Vision, Algorithm Analysis, and Design Software Engineering, Robotics Systems, Advanced Topics in AI, Deep Learning, Information Visualization and Virtualization

Anna University — **India**

Bachelor of Engineering, Automobile Engineering | GPA: 8.6 / 10 — *July 2017 – June 2022*

RESEARCH & INTERNSHIP EXPERIENCE

Improved Computer Vision-based Framework for Electronic Toll Collection

IEEE - 2022 12th International Conference on Cloud Computing, Data Science & Engineering

Research Assistant — *April 2021 - September 2021*

- Compared different convolutional neural network architectures to classify the appearance attributes of a vehicle and developed a siamese model using triplet loss function for vehicle re-identification. The system included pre-processing of image data, model training and testing, and implementation of the siamese network for vehicle re-identification.
- Developed a deep learning model to detect the license number plates, process the image, and identify the digits to tag the vehicle with a unique ID using **OpenCV** and **TensorFlow**

KPMG Australia — **Remote**

Data Analytics Consulting Internship — *July 2021 - Aug 2021*

- Performed end-to-end data analysis using python including **data quality assessment, and multivariate analysis,** and built an **interactive dashboard** using **Power BI** and **Tableau** to provide the client with insights on potential customers to increase their profit. The system included **data cleaning**, **exploratory data analysis**, and **data visualization** using Power BI and Tableau

RELEVANT PROJECTS (github.com/Raahul-G)

- **Autonomous Driving Robot TurtleBot -** Developed an autonomous driving system for a robot using **ROS**, **Image Processing**, **Computer Vision**, and **Lidar Toolbox** in **MATLAB**. The system includes algorithms for **lane detection**, **obstacle avoidance**, and **target following**
- **Smart Air Circulation Controller For AC System -** Designed a safety system that utilized **facial detection algorithms** and microcontrollers to maintain optimal CO2 levels in a car cabin. The system included an algorithm for facial detection using the **OpenCV** library and controlled the movement of flaps in the AC duct to maintain optimal CO2 levels.
- **Classifying Wild Cats** - Developed an **end-to-end ML model** with an automated CI/CD pipeline using **Google Cloud Services** and **Streamlit** for building a web app. The system included **data engineering**, **model training**, **deployment**, and **hosting** on the Google Cloud Platform, with a Streamlit web application front-end for user interaction.
- **Paddy Leaf Disease Classifier** - Developed a multi-class image classifier using **Tensorflow** and **Keras** with 90% accuracy that could be used to identify different diseases in the paddy plant (Kaggle)
- **News Category Classification** - Handled heavily imbalanced data by clustering similar categories and building a classification model over the custom binned categories. (Kaggle)

CERTIFICATIONS

DeepLearning.AI TensorFlow: Advanced Techniques Specialization.
Coursera - October 2021

DeepLearning.AI TensorFlow Developer
Coursera - December 2020

Google Certified TensorFlow Developer
TensorFlow Exam - May 2021

Deep Learning Specialization
Coursera - September 2020

SKILLS & INTERESTS

Languages: Python (*NumPy, Scipy, Pandas, Scikit-learn, Tensorflow, Keras, Matplotlib, Seaborn, OpenCV*) |
MATLAB (*ROS, Image Processing, Computer Vision, Lidar*) | **SQL** |

Algorithms: Machine Learning (*Supervised Learning: Regression, Classification, Support Vector Machines, Nearest Neighbor, Neural Networks | Unsupervised Learning: Dimensionality Reduction, Anomaly Detection, Clustering*);
Deep Learning (*ANN, CNN, NLP, LSTM, RNN, MLPs, GANs, Autoencoders*)