Parth K. Vasoya

parthvasoya2000@gmail.com LinkedIn GitHub +91 6355230093

Education

G H Patel College of Engineering and Technology, Anand, India 2018 – 2022
Bachelor of Engineering in Information Technology *CGPA: **8.95/10***

K.D. Ambani Vidyamandir (KDAV), Jamnagar, India 2016 – 2018
AISSCE *Percentage: **91.0***

Publications

Dr. Falgun N. Thakkar, Dev Vaghani, **Parth Vasoya**, Dhruv Desai. Bandwidth Efficient Digital Image Watermarking Scheme Using a Concatenation of Three Transforms. In International Conference on Interdisciplinary Research(ICIR), 2020 [Paper]

Experience

Research Intern February 2022 – Present
Indian Institute of Science(IISc) *Bangalore, India*

- Proposed and designed a novel recurrent neural network for lane detection based on LSTM.
- Achieved **2%** improvement in accuracy and **150%** reduction in inference cost on Indian Driving Dataset (IDD) over CRF-based methods.
- Integrate **ROS** object tracking, lane-line detection, and semantic segmentation architectures with AV software stack.

Web Development Intern March 2021 – August 2021
Reliance Industries Limited (RIL) *Jamnagar, India*

- Spearhead development of Carpool Management System utilizing **Node.js** for the core trip execution engine, serving **24k** users across a **300 sq. km** area.
- Reduced ETA by **30%** using Dijkstra's algorithm with heuristics, saving **$560k** in annual fuel costs.
- Implemented a data visualization tool using **react-map-gl** to monitor **1480** vehicles.

Machine Learning Engineer November 2020 – April 2021
DevTown *Bangalore, India*

- Trained a YOLOv3 object detector to identify people and traffic signs on OpenImageV6 **1.6M** images, achieving a loss of **4.8%**.
- Optimized a **YOLOv3-Deep SORT** object tracker through Dlib integration and minimized loss to **4.73%**.

Projects

Real-Time Drowsiness Detection (*IIT Bombay)* October 2020 – February 2021

- Developed a **CNN**-based drowsiness detector with Dlib facial feature extractor with **91.6%** accuracy.
- Crafted a sub-network based on lightweight architectures for yawn detection and blink detection with EAR threshold **0.15**.
- Ideated a CNN based on attention mechanism to achieve **0.5 deg** best-case accuracy across the same FOV on NVGaze **2M** images for **eye gaze estimation**.

Face Mask Detection August 2020 – December 2020

- Developed a CNN architecture that employs multi-task learning to detect the presence of a face mask and its coverage of the nose, mouth, and chin on human faces.
- Conducted training on MaskedFace-Net **138k** synthetic images.

Digital Watermarking Scheme (*Research Project)* October 2019 – July 2020

- Deployed a digital watermarking scheme based on SVD, DWT, and **DCST** with improved bandwidth efficiency and robustness (PSNR **26.63**) using **Heroku**.

Introduction to Robotics using Artificial Intelligence (*Udacity)* April 2019 – September 2019

- Created a search algorithm that determined the car robot's quickest route between the start state and the goal state; Arrive at an efficient shortest path to the goal state using **A***.

Developer QnA Website February 2019 – March 2019

- Tailored a doubt-solving website, integrated a QnA bot using **Azure Cognitive services**, and augmented knowledge base with **1.5k** Stack Overflow questions.

Work Together October 2018 – January 2019

- Developed and deployed a university management website using **Flask** to support **5k** users.

Skills

Technical Skills	: Computer Vision, Machine Learning, Deep Learning, Full-Stack development
Programming Languages	: C, C++, Python, Java, JavaScript, HTML, MySQL
Frameworks/Libraries	: Tensorflow, Pytorch, Keras, Scikit-learn, OpenCV, Numpy, Pandas, ROS, Django, Flask
Other Software/Tools	: Git, MatLab, Visual Cryptography, Ubuntu, Microsoft Office, Heroku

Certifications

Machine Learning	Stanford University - Coursera
Data Science Math Skills	Duke University - Coursera
Statistics for Machine Learning	Live Training - ShapeAI
The Complete 2021 Web Development Bootcamp	Online course - Udemy
Machine Learning A-Z: Hands-On Python and R In Data Science	Online course - Udemy
The Complete Self-Driving Car Course - Applied Deep Learning	Online course - Udemy

Leadership and Community Involvement

Computer Society of India February 2019 – March 2020

- Led a team of eight students, conducted a session on **Github Hacktoberfest**, arranged logistics, and guided the team in organizing a Coding event for Imaze 2018 (National level Technical Symposium)

Microsoft Learn Student Ambassador January 2019 – February 2020

- Planned delivery content and assisted two Gold Microsoft Learn Student Ambassadors from the University in delivering talks on **Azure Cognitive Services** at **5** State Colleges, engaging **650+** students.

HackGujarat 2020 August 2020 – September 2020

- Lead the Event Sponsorship and Social Media Marketing operations for a nationwide hackathon participated by **580** teams

Bachhpan (NGO) November 2018 – April 2019

- Organised educational activities for underprivileged children.