

Mansi Dhamne

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EDUCATION

Bachelor of Technology in Computer Science

Nov. 2022 – June 2026

Sardar Patel Institute of Technology, Minor in Finance and Management

CGPA: 9.60

WORK EXPERIENCE

Research Intern

September 2024 – Present

Carnegie Mellon University, PA, USA

Remote

- Working on weakly supervised video-anomaly detection with context at CBD, SCS Lab

Software Development Engineer Intern

June 2024 – October 2024

Procura Business Pvt. Ltd.

Mumbai, India

- Automated bill scanning and data extraction, significantly reducing manual effort for a 15-member team, using OCR and NER classification
- Increased lead generation by 50% and reduced bounce rate by 25% by overhauling the company's main website, enhancing user experience, visual design, and mobile responsiveness.
- Streamlined the sales process for 2,000+ products, enabling efficient quotation generation by developing an order-reports system using Next.js, Nest.js, Chakra UI, Busy Controller, Docker, and PostgreSQL

Software Development Engineer Intern

June 2024 – July 2024

Advance Mobility Pvt. Ltd.

Mumbai, India

- Enhanced operational security and compliance by 30% by developing and deploying a comprehensive Blacklisting Module using industry-standard technologies, effectively blocking unauthorized drivers and vendors.
- Provided critical technical support by maintaining the company website and serving as a key liaison across 7 departments, including drivers, vendors, vehicle centers, and admin.

RESEARCH EXPERIENCE

Comparing GAN and RL Approaches for Data Augmentation

August 2024 – Present

- Conducting extensive literature survey to find a research gap in optimal data augmentation techniques to reduce overfitting of models.
- Objective includes defining pre-tested scenario-based data augmentation techniques to reduce time spent on optimizing data while training models.

Intelligent Driver Assistance System | *Python, OpenCV, Dlib*

March 2024 – April 2024

- Improved driver safety by developing a terminal-based application that monitors driver alertness, addressing drowsiness and lane departure rates.
- Achieved 94.10% accuracy on a self-collected Indian road-specific dataset using a web camera attached to the vehicle.
- Enhanced detection accuracy using facial recognition and analysis techniques, including eye and mouth aspect ratios for drowsiness detection, and Abs Sobel Thresholding, perspective transformation, and lane curvature estimation for lane departure alarms.

PROJECTS

Cyber.AI | *RAG, SecureBERT (LLM), spaCy, Knowledge Graphs, FastAPI*

October 2024

- Conducted a detailed assessment of infrastructure document of companies using **Feature Vector Clusters** to identify vulnerabilities
- Used **Chain of Thought Prompt Engineering** to generate dynamic questions for the bot to analyse the risk faced by the company.
- Implemented Topic Modelling using LDA algorithm to make a cybersecurity based corpus to further find gaps and analyse risk.

Open Domain Question Answering | *PyTorch, spaCy, nltk*

September 2024

- Implemented a Question Answering model that involves multi-layer LSTMs, bilinear attention, self-attention, character embeddings and more on the SQUAD dataset to understand Deep Learning and NLP

LLM Training for NLP Text Classification | *RoBERTa, PyTorch, Docker* July 2024

- Binary classification of spam messages using LLMs as well as baseline models to compare performance.
- Highest accuracy was given by RoBERTa, the LLM model at 96.86% while among baseline models, Logistic Regression gave highest accuracy of 94.44%

Automatic Video Editing | *Python, moviepy, whisper-timestamped, VOSK, Speech Recognition* July 2024

- Automated modification of videos based on silences or pauses by deleting the unwanted parts.
- Processing time was observed to be 0.9 times video duration irrespective of the size of the file.

ProcEasy | *Next.js, Next.js, MongoDB, Clerk, Flask, SARIMAX* August 2024

- Achieved 97.91% accuracy for a Seller Rating Model using Linear Regression and fine-tuned a Demand Forecasting Model to determine product demand using SARIMA
- Made an end-to-end platform for supply chain optimisation to streamline communication between purchase department and various vendors using graphic visuals and interactive UI

ACHIEVEMENTS

First Prize at DataHack 3.0 Hackathon: Achieved the first prize with a Cybersecurity Risk Assessment Bot called Cyber.AI

First Prize at S.P.I.T SE Hackathon: Achieved the first prize among 50 teams with a full stack application called **PeerConnect** - a central study platform leveraging Next.js, TypeScript, Gemini API and MongoDB.

Amazon ML Summer School, 2024: Got selected in the top 3% amongst 90000+ participants

EXTRA CURRICULUM

Creatives Lead | *Google Developer Students Club* July 2023 – June 2024

- Led the creation of visual content such as banners, social media posts, and videos for events and workshops.
- Guided and mentored junior members of the creatives team, helping them develop their design skills
- Organized multiple tech-related events round the year for 200+ students successfully.

Joint Secretary | *Rotaract Club of S.P.I.T* July 2023 – June 2024

- Coordinated multiple events, ensuring that all logistical and operational aspects are handled smoothly.
- Organized the highly anticipated S.P.I.T Marathon for Mental Health Awareness, attracting over 1,000 enthusiastic runners.
- Collaborated with all the committee members to plan and execute strategies for the growth and success of the club.

SKILLS

Languages/Database: Python, C/C++, SQL (Postgres), TypeScript, Tailwind CSS, MongoDB

Frameworks: React, Nest.js, Next.js, TensorFlow, OpenCV, Hugging Face, Keras, PyTorch, spaCy, RAG

Developer Tools: Git, Docker, Google Cloud Platform, Vercel

Soft Skills: Teamwork, Leadership, Adaptability, Problem Solving

CERTIFICATIONS

Advanced Learning Algorithms: Andrew Ng Machine Learning Specialization, Coursera

Unsupervised Learning, Recommenders, Reinforcement Learning: Andrew Ng Machine Learning Specialization, Coursera

The Complete Python Bootcamp From Zero to Hero in Python: Jose Portilla, Udemy