Nitin Babu

Software Developer | Researcher

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WORK EXPERIENCE

Research Intern (Cybersecurity and Privacy) May 2024 – April 2025
Tata Consultancy Services - Research Pune

- Developed a Task Allocation and Load Balancing algorithm for customer support tickets, achieving 95% efficiency and significantly improving response times and customer satisfaction metrics.
- Enhanced a privacy technique to prevent data breaches, strengthening the security framework for sensitive information through effective data masking strategies.
- Implemented dX-Privacy in customer support tickets to enhance data privacy while maintaining the quality of insights derived from the data.
- Techs Used and Learned: Differential Privacy, MS Presidio, spaCy (NLP techniques including POS-tagging, NER, Tokenization, Text Classification), Streamlit, Python, Pandas, Matplotlib, Git/GitLab.

EDUCATION

M.Tech (Computer Science and Engineering - AI & ML) - (Current- 7.0 CPI) 2023 – Present
PDPM Indian Institute of Information Technology, Design & Manufacturing (IIITDM) Jabalpur

B.Tech (Computer Science and Engineering) - 7.64 CGPA 2019 – 2023
Bundelkhand University Jhansi

Senior Secondary School (PCM) 2018
Kendriya Vidyalaya No.2 Air Force Station Pune

SKILLS

Programming Languages — C, C++, Python.

Frameworks & Tools — Git/Gitlab, TensorFlow, Keras, , PyTorch, PyCharm.

Web Technologies — HTML5, CSS3, JavaScript.

CS Fundamentals — OOPs (C++, Python), Operating Systems, DBMS, Computer Networks, Data Structures and Algorithms.

Databases — SQL.

Deep Learning — ANN, CNN, RNN, LSTM, Bi-LSTM, NLP.

Machine Learning — Supervised, Unsupervised and Reinforcement Learning.

Soft Skills — Teamwork, Critical Thinking, Problem Solving, Continuous Learning.

PROJECTS

COVID-19 Sentiment Classification Model Using Bi-LSTM (Natural Language Processing)
Technologies Used - Python, Keras, Tensorflow, NLTK, Word2Vec, Matplotlib.

- Developed a robust sentiment analysis model using Bi-LSTM and NLP techniques, achieving an impressive 90% accuracy.
- Analyzed tweets from the COVID-19 pandemic, categorizing sentiments into Positive, Negative, and Neutral.
- Utilized a comprehensive dataset comprising public tweets during the pandemic.

Attendance by Face Detection using OpenCV (Image Processing)
Technologies used - OpenCV, dlib, Face_recognition, TextToSpeech.

- Engineered a Python Face Recognition Attendance System using OpenCV, achieving over 95% face matching accuracy.
- Integrated pyttsx3 for audio feedback upon successful recognition, improving user interaction and experience.
- Built a user-friendly interface displaying recognized faces and logging attendance in a CSV file.

Image Caption Generator using Bi-LSTM (Image and Language Processing)
Technologies used - CNN, Bi-LSTM, RNN, VGG16, PIL.

- Created an innovative ML application that combines CNN and Bi-LSTM for generating dynamic image captions.
- Attained a system accuracy exceeding 60%, demonstrating effective integration of image and language processing.
- Employed CNN and LSTM in a cohesive architecture and dataset used is Flickr8k.

ACHIEVEMENTS

Qualified GATE (CSE) — March, 2023

Successfully conducted the events with teamwork, in college sports fest. — March 2021

Technical volunteer at spacecraft exhibition, held in university, organized by ISRO. — November 2019