Bhanuja Karumuru

+13474459258 bk3170@nyu.edu bhanujakarumuru Bhanuu01

EDUCATION

New York University, Tandon School of Engineering **Sep 2025 - May 2027**
Master of Science in Computer Engineering *New York, USA*

National Institute of Technology Sikkim **June 2020 – May 2024**
Bachelor of Technology in Electronics and Communication Engineering ***CGPA:*** *8.3* *Sikkim, India*
Key Coursework: Data Structures & Algorithms, Computer Networks, ML, IoT, Probability & Stochastic Processes

TECHNICAL SKILLS

Programming Languages: C, C++, Python, JavaScript
Database Management: MySQL, MongoDB, SQLite
Frameworks & Tools: Django, Flask, Express.js, Docker, REST APIs, Git, GitHub
Cloud/ Devops: Docker, AWS (EC2, Lambda)
AI/ML: Pandas, Numpy, Scikit-learn, TensorFlow, OpenCV, Librosa, Matplotlib, Seaborn
Others: Agile/Scrum, Test-Driven Development, Unit/Integration Testing, Code Reviews, Incident Response

WORK EXPERIENCE

SalesUp - Yellowlake Technologies Services and Private Limited **July 2024 – July 2025**
Software Development Engineer *Kolkata, India*

- Developed scalable backend systems for lead management using Flask and Supabase, improving workflow efficiency by 40%, and played a key role in building an internal Customer Relationship Management (CRM) system with advanced features to enhance user experience.
- Integrated 10+ third-party APIs (WhatsApp, Slack, AI tools) for multi-channel notifications and reminders, reducing manual intervention, while building and optimizing CI/CD pipelines with Docker and Jenkins to increase deployment reliability by 30%.
- Collaborated cross-functionally with product, design, and operations teams to implement automation solutions aligned with company goals, contributing to internal product development.

Software Engineering Intern *June 2023 – November 2023*

- Developed email automation systems using LLMs and APIs, improving campaign effectiveness by 25% and optimizing marketing automation, reducing manual efforts by 40%.

PUBLICATIONS

- **"In-Domain Data Augmentation for Dysarthria Severity Classification"** – SPCOM 2024.
  Co-authored a peer-reviewed paper, improving classification by 42.86% using VTLP-based augmentation with traditional ML models (SVM, RF, ANN).
- **"Feature-Based Dysarthria Severity Classification (2024)"** – Undergraduate Research Work (Journals Under Review). Led a study integrating temporal, prosodic, and spectral features, achieving a 61.1% improvement in CER with LSTM/TDNN classifiers.

PROJECTS

- **Dysarthria Severity Classification using Temporal, Prosodic & Spectral Features** - *MFCC, AZCR, STFT, Spectral Entropy, LSTM, TDNN*
  Applied prosodic and spectral features (MFCC, AZCR, STFT) with LSTM/TDNN models to classify severity of speech disorders. Achieved a 61.1% reduction in CER compared to baseline approaches. Results were published at the International Conference on Speech Processing and Communication 2024.
- **GAJA: IoT-Based Elephant Detection System** - *Raspberry Pi, Python, MQTT, Sensors*
  Built a real-time monitoring system using Raspberry Pi, PIR sensors, and MQTT protocol to detect elephant intrusions near railway tracks. Implemented OpenCV-based image classification to generate alerts for railway control systems. The system reduced false positives by 35% and was successfully tested in pilot deployments.
- **Stress Detection via Audio-Visual ML** - *OpenCV, librosa, SkLearn, LSTM, SVM*
  Currently developing a system that combines physiological and speech signals for stress classification using CNN and LSTM models. Work to date includes preprocessing pipelines and early dashboard prototypes for real-time analysis. Aims to advance multimodal fusion methods for stress detection.