Param B Patel

M.Tech Student

+91-8200690992 param1812@gmail.com param-patel-30693316b Guwahati, India

SUMMARY

I'm a passionate and driven Computer Science engineer, currently pursuing my M.Tech at IIT Guwahati, where I focus on innovative projects in IoT security, machine learning, and embedded systems. I've developed impactful systems like an IoT device classifier, a handwriting-based dyslexia detection tool, and a speech-command vehicle recognition app. One of my proudest achievements is securing a 99.33 percentile in GATE CS and optimizing a CNN model by halving its latency using FPGA HLS tools. I'm skilled in C/C++, Python, Java, MySQL, Git, and comfortable working across both Windows and Linux—always motivated to solve real-world problems with technology.

EDUCATION

M.Tech

Indian Institute of Technology, Guwahati

2023 - Present Guwahati, India

GPA **7.67** / 10

B.Tech

Marwadi Education Foundation FOE, Rajkot

2018 - 2022 Rajkot, India

GPA **8.38** / 10

KEY ACHIEVEMENTS

GATE CS

Qualified GATE CS with 99.33 percentile (All India Rank 507)

IIITH PGEE CSE

IIITH PGEE CSE with 99+ percentile

SKILLS

Programming Languages

C/C++ **JAVA** **Python**

Database Management

MySQL

Operating Systems

Windows **Linux** **MacOS**

Version Control

Git

TRAINING / COURSES

Object Oriented Programming(OOPs)

Computer Systems Lab

Data Structures and Algorithms

Data Structures Lab

Speech Processing

Database Management System

Operating Systems

C-based VLSI Design

Design and Analysis of Algorithms

Image Processing with Machine Learning

PROJECTS

MTech Thesis Project

07/2024 - 01/1970 Guwahati, India

Classification and Authentication of IoT Devices

- The aim is to classify and authenticate IoT devices to detect anomalous behaviour using their network characteristics
- To enhance the accuracy of classification and identification, various ML-based approaches on multiple datasets are being explored

Course Project

03/2024 - 05/2024 Guwahati, India

Detection of Dyslexia using Handwriting Images

- This Image Processing and ML project evaluated ANN, Decision Tree, and SVC classifiers
- Image-based features outperformed text-based ones, suggesting the potential benefit of integrating both feature types
- Tools used include OpenCV, Tesseract, TensorFlow

Course Project

11/2023 - 12/2023 Guwahati, India

Real Time Vehicle Recognition Using Speech Commands

- Developed an application that can be trained on vehicle names and retrieves vehicle details using speech commands
- Provides Live Training option to add new vehicle names
- Utilized Linear Predictive Coding (LPC) for speech signal processing and Hidden Markov Model (HMM) for speech recognition
- This project is an extension of the Digit-Recognition assignment in CS566 Speech Processing course

Course Project

02/2024 - 03/2024 Guwahati, India

Multi-Threaded Event Reservation System

- Developed a multi-threaded Event Reservation System using pthread API calls
- Managed events with multiple seats, ensuring data consistency and load management
- Applied synchronization techniques for thread blocking and signaling, maintaining database integrity
- Tools used include C and Visual Code Studio

Course Project

03/2024 - 05/2024 Guwahati, India

Comparative Analysis of High Level Synthesis for HAR CNN Model

- Analyzed and compared HLS techniques for generating FPGA-compatible code for a CNN-based Human Activity Recognition model
- Achieved a reduction in latency to 4.52 million clock cycles in Vivado, nearly halving the original latency
- Tools used include Keras2c, HLS4ML, and Vivado HLS