

TUSHAR KOLEY

B.Tech Graduate (ECE)

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Summary

Results-oriented B.Tech graduate (2025) with a strong foundation in Computer Science fundamentals, including **Object-Oriented Programming (OOP)** and **Data Structures**. Proficient in **Python**, **C++**, and **SQL**, with hands-on experience in **IoT**, **Machine Learning**, and **Full-Stack integration**.

Skills

Languages & Core: Python, C++, SQL, Object-Oriented Programming (OOP), Data Structures

Data & AI: NumPy, Pandas, Data Cleaning, Machine Learning, YOLOv9, OpenAI & Gemini APIs

Tools & Frameworks: Git/GitHub, VS Code, Roboflow, Arduino IDE, MS Excel

Hardware/IoT: Raspberry Pi, Arduino, Sensors (ECG, Pulse Oximeter)

Experience

Python Intern

Jan 2023 – Feb 2023

Extern's Club

Remote / Hybrid

- Completed intensive training focusing on **Python programming** and collaborative problem-solving.
- Collaborated with a team to develop minor projects, enhancing skills in debugging and logic building.
- Applied core programming concepts to solve real-world scenarios, ensuring code efficiency and readability.

Projects

Smart Health Abnormality Diagnosis System | *Python, C++, IoT, ML*

Aug 2024 – May 2025

- **IoT Data Pipeline:** Engineered a complete data acquisition system using Raspberry Pi and Arduino (C++) to capture real-time vitals, processing over **1,000 data points per minute**.
- **Data Engineering:** Led the end-to-end pipeline, processing and labelling a dataset of over **2,350 ECG graph images** to ensure high-quality training data.
- **Machine Learning:** Trained a custom **YOLOv9 object detection model**, achieving **94% accuracy** in identifying 5 distinct arrhythmia diseases.
- **Full-Stack Integration:** Integrated the model via API into a web application, reducing patient analysis time from hours to **under 30 seconds**.

AI Q&A Chatbot Application | *Gen-AI, Python, APIs*

Mini Project

- Developed an AI-powered application capable of answering queries based on uploaded images.
- Leveraged Large Language Models (LLMs) and prompt engineering to ensure accurate context interpretation.
- Implemented image processing algorithms to extract visual data for the Q&A engine.

Training & Certifications

- **Deloitte Australia Data Analytics Job Simulation (Forage) – Apr 2025:** Performed data classification in Excel, created dashboards in Tableau, and conducted forensic technology analysis.
- **Signal Transmission & Radio Broadcasting – All India Radio (2024):** Completed vocational training on communication systems and signal processing hardware.
- **Programming Certifications:** Proficient in Python and SQL query writing for data manipulation.
- **Excel Certification (Coursera):** Proficient in Excel, Data Cleaning, VLOOKUP, HLOOKUP, Pivot Tables

Education

B.Tech in Electronics and Communication Engineering

Aug 2021 – Jun 2025

St. Thomas' College of Engineering and Technology, Kolkata

CGPA: 7.87 / 10