

Swayam Mishra

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Education

Kalinga Institute of Industrial Technology

2023-2027

Bachelor of Technology in Computer Science Engineering

Bhubaneswar, Odisha

- **Relevant Coursework:** Data Structures and Algorithms in C/C++, Operating Systems (Linux), Object Oriented Programming (Java), Database Management Systems, Computer Networks, Distributed Operating Systems, Software Engineering, Probability and Statistics, Discrete Mathematics.

Achievements

Cybervault CTF 1.0

August 2024

Team cAPTCHA

- Won the CTF with a total team score of 1700 points.
- Achieved an individual score of 500 points.

IoT Lab CTF

December 2024

Solo Participant (UID: cowsy)

- Secured 4th position with a total score of 1590 points.
- Participated in a 22-hour solo CTF challenge.

Shaastra CTF

January 2025

Team B1t_Ra1d3r5

- Secured 261st position globally with a team score of 1736 points.
- Achieved an individual score of 1736 points.
- Participated in a 2-hour competitive CTF event.

Projects

Spend Wise: AI-Powered Financial CLI | C++, Python, MySQL, Scikit-learn, Pandas | GitHub Repository

- Architected a C++ command-line application for personal finance tracking, applying **SOLID design principles** and **Object-Oriented Analysis (OOAD)** for a modular, maintainable codebase.
- Designed and implemented a **MySQL database schema (ERD, DDL)** with relational integrity and secured against SQL injection using **prepared statements**.
- Developed a Python analytics module using **Pandas** and **Scikit-learn** to train a **Linear Regression model** for predicting future monthly expenses based on historical data.
- Integrated a **Generative AI** feature using the **Hugging Face API** to provide users with personalized financial tips based on their spending patterns.

Smart Mountain Climber Helmet | ESP32, Arduino Uno, LoRa SX1278, MAX30102, Neo-6M GPS

- Engineered a **wearable IoT helmet** for mountain climbers to continuously monitor vital signs and geolocation.
- Integrated sensors for **heart rate & SpO₂ (MAX30102)**, **temperature (DS18B20)**, and **fall detection (MPU6050)**.
- Enabled real-time data transmission using **LoRa communication** and emergency **SMS alerts via SIM800L**.
- Implemented **geofencing, GPS tracking (Neo-6M)**, and logic-based alert triggers for life-critical conditions.
- Optimized system power usage with **battery management (18650 + TP4056)** for field deployment.

Delivery Service Engine | Java, JDBC, PostgreSQL, Supabase | GitHub Repository

- Designed and built the complete backend infrastructure for an Online Food Delivery System, utilizing Core Java and OOP principles to create data models and the DAO pattern with JDBC for seamless connection to a cloud-hosted PostgreSQL database on Supabase.

Technical Skills

Languages: C++, Java, Python, SQL (PostgreSQL, MySQL), Kotlin, JavaScript

Networking: IP Addressing & Subnetting (IPv4), Network Address Translation (NAT), IP Routing (Basics), Network Troubleshooting

Libraries & Frameworks: JDBC, Pandas, Scikit-learn, React.js, Node.js, Android SDK, Jetpack Compose

Developer Tools: Git & GitHub, VS Code, Supabase, Arduino IDE

Key Concepts: Object-Oriented Design (OOD), SOLID Principles, Machine Learning, Generative AI, Database Design (ERD, DDL), Business Intelligence (BI)