SOUMI DAS

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SUMMARY

I am a dual-degree student pursuing B.Tech in Computer Science and BS in Electronic Systems. I have prior experience in embedded systems, electronics and machine learning through various personal projects. I am an inquisitive learner with strong problem-solving skills. I am eager to learn, take on challenges and contribute effectively to the role.

EDUCATION

Indian Institute of Technology, Madras — Chennai, Tamil Nadu
Foundation Level, Bachelor of Science in Electronic Systems. — *Sept. 2025 – Sept. 2029*

Institute Of Engineering and Management, Kolkata — Kolkata, West Bengal
2nd year, Bachelor of Technology in Computer Science and Engineering — *Jul. 2025 – May 2029*

EMBEDDED PROJECTS

Home Security System / *Arduino Nano, C/C++, RFID, I2C, SPI, Multiple Sensors* — Dec. 2025

- Project repository: https://github.com/bubblegum-fairy/Arduino-Home-Security-System-
- Arduino Nano-based multi-module security system.
- RFID-based authorization using the MFRC522 module via SPI communication.
- Real-time status updates displayed on an LCD1602 screen via I2C. Buzzer attached to alert for intrusions.
- Door locking mechanism featuring a 5V relay-driven solenoid lock that arms and disarms the system.
- Window security utilizing a laser tripwire system (laser combined with a Light Dependent Resistor/LDR).
- Fire safety integration via a flame sensor that automatically disarms the door for emergency egress.

Interactive LED Animation System / *Arduino Uno, Embedded C/C++, MAX7219, SPI* — Nov. 2025

- Project repository: https://github.com/bubblegum-fairy/Fun-LED
- Designed and developed an interactive display system utilizing an Arduino Uno to render custom animations on an 8x8 LED dot matrix.
- Integrated a TTP223 capacitive touch sensor to serve as the user interface for controlling the display.
- Programmed dynamic animation cycles, enabling users to rotate through three distinct animations at the touch of a sensor.

MACHINE LEARNING PROJECTS

PRISM - Severity Prediction and Optimizing Response Strategies Using AI and Machine Learning

- Project repository: https://github.com/bubblegum-fairy/prism
- Uses supervised linear regression to predict the severity index of global disasters.
- Analyzes casualties, economic losses, and emergency-response data from the Global Disaster Response Analysis dataset.
- Achieves 97.51% accuracy and an RMSE of 0.4432, helping authorities allocate resources and improve proactive disaster recovery.

Global Disaster Severity Prediction Model / *Python, Scikit learn, NumPy, Pandas* — Dec. 2025 – Present

- Project repository: https://github.com/bubblegum-fairy/Global-Disaster-Model
- Prediction: Predicts the severity of a natural disaster based on factors such as casualties, economic loss,
- Used Supervised Machine Learning
- Linear Regression was used for prediction
- Used KNN to visualize the prediction result
- Tolerance and accuracy tested through MAE, MSE and RMSE calculators

Fitsphere Model / *FastAPI, Python, Scikit Learn, Joblib, Uvicorn* — Dec. 2025 – Present

- Project repository: https://github.com/bubblegum-fairy/Fitsphere
- Created an app feature that recommends personalized exercises by analyzing user health metrics (BMI, height,

calorie intake).
- Used ensemble learning to train a Random Forest classifier for the recommendations.
- Built the API with FastAPI to handle user data and deliver exercise suggestions.

Technical Skills

Languages: C/C++, Python, SQL (MySQL), JavaScript, HTML, CSS, PHP
Frameworks: React, Node.js, FastAPI, Arduino
Libraries: Pandas, NumPy, Matplotlib, Scikit-learn, Joblib, Uvicorn
Developer Tools: Git, VS Code, PyCharm, Google Colab,

Co-curricular Activities

SPECTRUM CONFERENCE Feb. 2025 – Present
Institute of Engineering and Management, Kolkata *Kolkata, West Bengal*
- Submitted a Research paper on Machine learning
- Presented a Research Poster

Extra-curricular Activities

Poetry Writing
- Portfolio: https://www.instagram.com/show.mee/

Illustration & Painting
- Portfolio: https://www.instagram.com/grizzzlie_bear