

Subhayan Mukherjee

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PROFESSIONAL SUMMARY

Computer Science undergraduate at NIT Durgapur specializing in Machine Learning, Data Analytics, and Backend Development. Strong algorithmic foundation backed by active competitive programming on Codeforces. Experienced in designing end-to-end ML pipelines using Python, Scikit-Learn, and Microsoft Azure, and integrating AI models (NLP, Decision Trees, Random Forests) into scalable production environments. Passionate about translating complex data into functional AI solutions.

EDUCATION

- National Institute of Technology, Durgapur** Durgapur, India
 - Bachelor of Technology - Computer Science and Engineering; CGPA: 8.52* August 2024 - June 2028
 - Courses: Analysis Of Algorithms, Data Structures, Operating Systems, Databases, Computer Architecture, Object-Oriented Programming*

TECHNICAL SKILLS

- AI/Machine Learning:** Scikit-Learn, Pandas, NumPy, NLP, CNNs, Statistical Modeling, Feature Engineering
- Languages:** Python, C/C++, Java, SQL, JavaScript, Dart
- Backend & Cloud:** Microsoft Azure, Flask, REST APIs, PostgreSQL, MySQL, Supabase, Render, Vercel
- Tools & Core CS:** Data Structures & Algorithms, OOP, Git, GitHub, n8n, Flutter

EXPERIENCE

- AI/ML Intern | Edunet Foundation (Microsoft Initiative)** June 2025 – July 2025:
 - Mastered core machine learning, deep learning, and computer vision concepts, including CNN architectures and neural network fundamentals.
 - Architected cloud-based machine learning pipelines on **Microsoft Azure** for structured dataset regression, optimizing data transformation and **feature engineering** to enhance model reliability.
 - Built and evaluated a **Used Car Price Prediction** engine using a Random Forest Regressor, leveraging log-transformed features and percentile-based outlier removal to achieve an **R² score of 85.4%**.
 - [View Certificate](#)

PROJECTS

- SpendWise – Full-Stack AI Finance Tracker | Python, Flask, Flutter, PostgreSQL, Supabase:**
 - AI Integration & Analytics:** Engineered an NLP **Magic Entry** pipeline to autonomously parse unstructured text into structured financial transactions. Developed an **AI Insights Engine** utilizing **fl_chart** to visualize historical data and detect overspending.
 - Architecture & UI:** Architected a scalable **Python/Flask** REST API on **Render** with a **Flutter** frontend, featuring a responsive **Material Design 3** UI and asynchronous state management.
 - Database & Security:** Provisioned a **Supabase PostgreSQL** database, securing financial records via stateless **JWT** authentication, **Werkzeug** password hashing, and an automated **OTP** recovery flow.
 - Automation & Export Utilities:** Developed backend schedulers to trigger automated debt reminders and budget alerts, alongside utilities to compile and export data into downloadable **PDF** and **CSV** statements.
 - [Live Web App](#) | [Demo APK](#)
- Pharmacy Management System (Team Project) | Python, Java, Node.js, MySQL:**
 - Took sole ownership of the **AI disease prediction module**: designed and trained a symptom-based classification engine using a **Decision Tree** in Python, evaluating on structured clinical data to provide real-time diagnostic insights.
 - Developed a full-stack pharmacy management application featuring customer and admin interfaces, **JWT + OTP-based authentication**, medicine inventory tracking, and an admin analytics dashboard.
 - Contributed **MySQL** database design and structured **SQL** schema/seed data as part of the backend team.
 - [Live Website Link](#)
- Used Car Price Prediction Pipeline | Python, Scikit-Learn, Pandas:**
 - Engineered a machine learning regression pipeline processing 4,300+ records, applying **log-transformations** and outlier removal for statistical modeling.
 - Trained a 150-tree **Random Forest Regressor**, achieving an 85.4% test R² score and validating robustness via 5-fold cross-validation.
 - Built an interactive **ipywidgets** UI with rigorous input validation to generate real-time predictions and contextual price-trend visualizations.
 - [GitHub Repository Link](#)

ACHIEVEMENTS

- **JEE Advanced 2024:** All India Rank **11,825**.
- **JEE Main 2024:** All India Rank **17,932** | **98.9 percentile** among ~1.6 million candidates.