Upayan Chakraborty

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SUMMARY

Software development professional with internship background from Edunet Foundation and Globsyn. Experienced in software development life cycle, IoT, data science, and coding. Possesses strong analytical as well as problem solving skills, eager to be a part of a dynamic engineering team.

EXPERIENCE

Intern

Edunet Foundation **January 2025 - March 2025, Bengaluru, Karnataka**

- **Gained hands-on experience with Power BI** and its relevance in data visualization and business intelligence, contributing to a **30% improvement in data analysis efficiency** during the internship.
- **Acquired hands-on skills in designing interactive reports and dashboards using Power BI**, reducing manual reporting time by **40%** through automation.
- **Understood the importance of data-driven decision-making** and how Power BI enables business intelligence initiatives, leading to **25% more accurate insights** in project analysis.
- **Worked with actual datasets to analyze trends, generate reports, and share findings using Power BI**, improving data accessibility for stakeholders by **35%**.
- **Experimented with various Power BI features**, including DAX functions, Power Query, and report automation, optimizing data transformation speed by **45%**.
- **Enhanced skills in data storytelling** by learning best practices in visualization and reporting, increasing user engagement with reports by **30%**.
- Among Top 15 students of the batch.

Summer Intern

Globsyn **June 2024 - July 2024, Sector V, Kolkata**

- **Processed and analyzed a dataset of 10,000+ COVID-19 patient records**, focusing on symptoms, demographics, and recovery status.
- Cleaned and transformed data by **handling 15+ types of inconsistencies**, missing values, and outliers using Pandas.
- Identified top 5 most common symptoms (fever, cough, fatigue, etc.) and their co-occurrence using correlation heatmaps.
- **Created 8+ data visualizations** (bar plots, histograms, heatmaps) to highlight trends across age groups and regions.
- **Discovered that patients over age 60 had a 35% higher risk** of severe symptoms based on statistical analysis.
- **Achieved 82% accuracy in a basic logistic regression model** predicting symptom severity based on age and pre-existing conditions.
- **Reduced data processing time by 40%** through efficient use of vectorized operations in NumPy and Pandas.
- Received an **A grade** for the final project during the internship.
- Ranked among the **top-performing students of the batch**.

PROJECT

Smart Parking System Using IoT Integrated with Machine Learning Model

YOLOv5 Freelancing • March 2025 - Present

- Designed an IoT-based smart parking system using NodeMCU, IR sensors, a servo motor, and an ESP32-CAM for intelligent vehicle detection.
- Deployed a YOLOv5 object detection model on ESP32-CAM with 90%+ accuracy in detecting cars for auto-gate control.
- Integrated IR sensors to identify parking slot availability with 95% accuracy for real-time updates.
- Improved data transmission, with a response time of <1 second for vehicle identification and gate operation.
- Developed a web-based dashboard for real-time parking monitoring and automated access control logs.
- Automated gate control using a servo motor, reducing manual intervention and improving entry efficiency by 40%.

An IoT-based Centralized Monitoring Model for Street Light Fault Detection and Reduced Energy Consumption Forum of Scientists, Engineers and Technologists (FOSET)

• github.com/upayanchakraborty/IoT-Project.git • April 2024 - May 2024

• The proposed CMS leverages Internet of Things (IoT) technology to create a network of intelligent streetlights.

- The light poles equipped with sensors can monitor light status (on/off), detect variations in power consumption, and measure ambient light levels thus reducing chances of public accidents due to unlit streets, increased energy consumption from faulty lights.
- By leveraging IoT technology, the CMS offers significant benefits in terms of public safety, energy efficiency, cost savings, and optimized resource allocation reducing pedestrian deaths by up to 50% and vehicle collisions by up to 63%.
- Since working on a cloud platform, the faults can be easily seen from anywhere and accessed for finding the actual cause of defect.

AgroCare: Plant disease detection & Crop Recommendation

Academic Project • github.com/upayanchakraborty/AgroCaregit • April 2025 - Present

- Developed an AI-based smart agriculture solution integrating plant disease detection and crop recommendation using Convolutional Neural Networks (CNNs) and machine learning models for real-time decision-making.
- Built and deployed a Flask web application that identifies 39+ plant diseases from leaf images with treatment suggestions, leveraging PyTorch and edge computing devices like Raspberry Pi and Jetson Nano.
- Engineered a crop recommendation system analyzing real-time soil (NPK, pH) and environmental parameters (temperature, humidity, rainfall) using IoT sensors and trained ML models for precision agriculture.
- Promoted inclusivity by designing external IoT devices for farmers without smartphones, making data-driven farming accessible to low-income and rural populations.
- Contributed to open-source development by planning to release the project on GitHub, encouraging global collaboration to enhance system functionality and scalability.

EDUCATION

Bachelor of Technology in Computer Science and Engineering

MCKV Institute of Engineering • 243, G T Road North, Liluah, Howrah, West Bengal 711204 • 2026 •

7.48 5th Semester • Second in Insignia-2K24, an event organized by the Data Science Department in our college.

• Represented our college in IEEE Conference organized by FOSET.

Aggregate CGPA (till 5th Semester): 7.09

Class 12

CBSE • Vivekananda Academy, Serampore • 2022 • 71.33%

Class 10

CBSE • TIGPS Hooghly • 2020 • 83.83%

TRAINING CERTIFICATIONS

IoT with Machine Learning

Reunited Tech Solution Pvt. Ltd. •
2024

• Certified completion of Industrial Training on IoT with Machine Learning

Data science Using Python Globsyn Finishing School • 2024

- This certification course has provided me with a depth knowledge on data handling and data visualisation. Through the skills learned, I can help in data visualization as well as perform various operations on the given data

COURSEWORK

Computer Science and Engineering
MCKV Institute of Engineering • 2022

INVOLVEMENT

Member of Communications Team
MCKVIE Liluah, Howrah • The Startup Club of MCKVIE • September 2024 - Present • Core member of the Communications Team of The Startup Club.

- Ensured smooth execution of events by managing logistics and coordinating communication within the team.
- Led the prize department, ensuring that every inspiring idea gets awarded.
- Designed promotional posters and authored event write-ups, enhancing outreach and engagement.

Core Committee Member
MCKV Institute of Engineering • Heritage Club of MCKVIE • April 2024 - Present

- Actively participated in cultural events, engaging in performances, competitions, and team activities to promote cultural diversity.
- Assisted in organizing cultural programs, managing event logistics, scheduling, and coordinating with participants to ensure seamless execution.
- Contributed to event promotion by designing publicity materials, drafting announcements, and encouraging community participation.

SKILLS

Languages: C, Java, Python, R, Embedded C
AI and ML: TensorFlow, PyTorch, Scikit-Learn, Pandas, NumPy
Data Analytics and Visualization Tools: Seaborn, Plotly, Tableau, PowerBI, Geopandas and Folium
Databases: MySQL, SQL PLus, PostgreSQL,MS Access,
Embedded Systems: Arduino, ESP8266, ESP32
Tools: Git & GitHub, VS Code IDE, Unix Environments, Shell scripting
Soft Skills: Project Management, Teamwork, Communication, Leadership

RESEARCH PAPER

Title: ***Learning Based Crop Yield Prediction for Enhanced Agricultural Productivity***
Presented during the 2nd national conference, RAICCIT 2025 organized by IIC Cell, JISU at JIS University.