

Debanjan Chakraborty



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📍 Erlangen, Germany

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📄 Job Seeking Visa

🏠 Willing to relocate

PROFESSIONAL SUMMARY

Data Science MSc graduate with a focus on extracting actionable insights from complex datasets to drive strategic decision-making. Experienced in leveraging advanced analytics, machine learning, and data visualization to solve business challenges and optimize operations. Eager to apply analytical skills to support business growth and innovation in a dynamic corporate environment.

Education

Masters in Data Science

Erlangen, Germany

Friedrich Alexander University [🌐](#)

Major - AI/ML

Master's Thesis

Anomaly detection Agent for timeseries (Process Industry) that can be integrated in an Multi Agent System (Under Siemens Energy)

Bachelors in Computer Science and Engineering

Kolkata, India

Maulana Abul Kalam Azad University of Technology [🌐](#)

Major - Software-oriented specializations

Bachelor's Thesis

Real-Time Emotion Detection through Facial Expression (7 basic emotions) [🌐](#)

Professional Experience

Working Student Data Scientist

10.2025 – 03.2026 | Erlangen

Siemens Energy

- **Developed an end-to-end Python microservice** to retrieve events from an external API and publish them to Azure Event Hub as part of a Proof of Concept enabling Multi-Agent System integration with the EcoMAIN platform. **Tech stack:** Python, Docker, Azure Event Hub.
- **Performed maintenance and bug fixes** on frontend applications built with the Vue.js framework. This included correcting backend API calls, adjusting UI components, and modifying component behaviors to better meet customer requirements.
- **Participated in technical and planning meetings**, including partner discussions on implementation details and Scrum ceremonies such as daily stand-ups, backlog refinements, sprint planning, and sprint reviews.

Working Student Data Analyst

12.2024 – 09.2025 | Erlangen, Germany

Siemens Energy

- In the operational R&D and portfolio management area, I managed the **MS sql database, Migrating and synchronising data** from **SharePoint**, Excel(XML, CSV) to **SQL** using **Power Automates**.
- I used **Alteryx** for data manipulation, Analysis and data preprocessing.
- I created **analytical dashboards** and reports using using Processed Data in **Tableau**.
- By engaging directly with users and other stakeholders, I refined their requirements and validate my solutions.
- I created and maintained a new collaborative database for portfolio and development data and support digital use cases in the backend.

Data Analyst

10.2021 – 03.2023 | Dhaka, Bangladesh

IT Grow Division Limited

- Connected **Power BI** with **MySQL, Excel** to import records. Performed data transformation in Power Query.
- Built **dashboards** using **Power BI** for finance, sales, marketing, supply chain and executives which supported the organization in gross margin improvement.
- **Learnt project management skills:** Project charter (using Mural), stakeholder mapping analysis, Kanban board for task assignment to improve productivity.

Skills

Programming

Python, SQL, Java script, Type Script

Microsoft Power Platform

Power Bi, Power Automate, Power Apps

Framework

Vue js, pytorch

Office 365

Word, Excel, SharePoint, PowerPoint

Machine Learning and Deep Learning

Scikit-Learn, OpenCV, LLMs, Transformer, Numpy, Pandas, Matplotlib, Seaborn.

Azure

ML, DevOps

Docker, Git

Projects

Project-Route-Planning-for-the-Visually-Impaired [🔗](#)

Master Seminar

- Designed end-to-end assistive navigation system (SENSATION) fusing DeepLabv3+ ResNet50 semantic segmentation with Valhalla GPS routing to deliver real-time sidewalk guidance for visually impaired users
- Pre-trained segmentation model on Cityscapes (5,000 images, 50 cities) using PyTorch Lightning with Dice loss, then fine-tuned on Mapillary (1,000 images) to improve sidewalk detection accuracy tracked via IoU
- Engineered three-column spatial analysis algorithm on live video frames to issue directional commands (left / center / right) based on dominant sidewalk pixel distribution
- Exported fine-tuned model to ONNX via TorchScript and integrated with ONNX Runtime for efficient CPU/GPU inference on video, image folders, and live camera streams
- Implemented GPX-based route processor that syncs Valhalla turn-by-turn instructions with frame timestamps, overlaying speed, coordinates, and navigation commands on output video

Driver's Friend - AI-Powered Multilingual Chatbot (Ongoing) [🔗](#)

- Architected full-stack German driving law chatbot: React/TypeScript UI → FastAPI backend → LangChain RAG (MiniLM + Chroma + Perplexity) with intelligent Serper fallback
- Implemented bilingual NLP pipeline (EN/DE) using spaCy for classification, generation, and conversation memory
- Built responsive MUI interface with Firebase auth and real-time streaming responses
- Deployed production system on VPS with Docker, Caddy reverse proxy, and automated pipeline

Crime Data Analysis in Chicago post Covid (2021-2025) [🔗](#)

- Architected end-to-end ETL pipeline correlating Chicago crime incidents (2021–present) with meteorological data, processing large-scale datasets from Chicago Police Department and weather APIs using Python
- Implemented automated data transformation workflows with SQLite persistence, exploratory data analysis notebooks, and statistical models revealing correlations between temperature variations and criminal activity patterns
- Built interactive data visualizations and Jupyter-based EDA reports delivering actionable urban insights from multi-source geospatial and temporal datasets
- Deployed CI/CD pipelines via GitHub Actions with automated testing, ensuring pipeline reliability and reproducibility across the full data engineering lifecycle

Languages

English

Fluent

German

intermediate

Norwegian

basic

Quality

Analytical Thinking | Technical Skills | written and verbal communication skills. | independent work | Team player | Proactive Thinker | Problem-solving skills