



AYUSH JUYAL

M.SC. DATA SCIENCE | ML & NLP | DEPLOYED ML APPLICATIONS

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M.Sc. Data Science student at TU Braunschweig with hands-on experience in Natural Language Processing, Machine Learning, and Software Engineering. Skilled in building and deploying NLP/ML applications (text classification, explainable AI, predictive modeling) and experienced in agile teamwork, test automation, and data annotation. Motivated to apply my skills in Conversational AI and contribute to user-centered software solutions.

TECHNICAL SKILLS

- **Programming & Tools:** Python, SQL, Java, C#, Git, Jupyter, REST APIs, Streamlit
- **Machine Learning & NLP:** Supervised & Unsupervised Learning, Text Classification, NLU, Tokenization, Explainable AI (SHAP, Grad-CAM), Feature Engineering, Scikit-learn, Pandas, NumPy
- **Data Engineering:** Data Preprocessing (EDA), Data Pipelines, Hadoop (HDFS, MapReduce), Cloud (AWS basics)
- **Visualization & Reporting:** Tableau, Matplotlib, Seaborn, Data Storytelling
- **Software Engineering & Agile:** Scrum, Jira, Confluence, Unit Testing, Debugging, Deployment, Test Automation, Documentation

PROFESSIONAL EXPERIENCE

Programmer Analyst Trainee, Cognizant Technology Solutions

Jul 2020 – Jan 2021

- Optimized SQL queries in large-scale databases, improving backend performance and reducing average runtime by 30%, minimizing downtime for client applications.
- Supported database management and background operations, ensuring seamless functionality for a leading US-based Internet provider.
- Collaborated in cross-functional projects using .NET (C#) and React, strengthening development efficiency and troubleshooting skills.

EDUCATION

M.Sc. in Data Science

Oct 2023 - Sep 2026

Technische Universität Braunschweig, Germany

- Built an NLP classifier app using Python, Streamlit, and machine learning models (Naive Bayes), improving text classification accuracy.
- Implemented and optimized explainable AI models (Grad-CAM, RISE) for visual interpretation in a deep learning competition, achieving strong interpretability scores.
- Developed DriveWorth, a full-stack machine learning app for used car price prediction:
- Trained and tuned multiple models (Random Forest, XGBoost, CatBoost) achieving an R2 score of 0.91.
- Added owner correction logic (more owners lead to lower predicted price) and integrated SHAP explainability.
- Implemented live INR to EUR conversion using a real-time FX API.
- Deployed the app with a polished Streamlit UI (Live Demo link available in GitHub).

B.Tech. in Computer Science and Engineering

July 2016 - June 2020

Specialization: Big Data Analytics

Graphic Era University, India

- Completed industrial training at Bharat Electronics Ltd. (BEL).
- Major Project: Built a web-based Student Management System using Java EE (Servlets, JSP) with role-based access, student portal, admin notifications, and query handling.
- Implemented a Mini Project on Iris Flower Classification using machine learning models (Logistic Regression, Decision Tree).

PUBLICATION

- **“Predicting and Enhancing the Fluctuations of Cryptocurrency using ML”**, International Journal of All Research Education and Scientific Methods (IJARESM), Vol. 11, Issue 7, July 2023.
(Co-author; implemented Machine learning (ML) and Deep learning (DL) models including LSTM, Random Forest, SVR and Linear Regression for cryptocurrency price prediction. best performance with LSTM)

ADDITIONAL INFORMATION

- **Languages:** English (Fluent), German (A2 – progressing toward B1).
- **Work Authorization:** Eligible to work in Germany as a student (20 hours/week during semester).
- **Volunteering:** Taught autistic children (ages 9–12) as part of an AIESEC cultural project in China, fostering education and social impact.