

Mayank Prasad

Senior Data Science Engineer

mayankprasad.com

📍 Bengaluru, India

✉ mayankpd24o@gmail.com

☎ +91 9591079144

🌐 in/mayank-prasad

EDUCATION

Bachelor of Engineering, Computer Science — First Class with Distinction

The National Institute of Engineering, Mysore, India | 2013 – 2017 | CGPA: 7.93/10

Delhi Public School, Bokaro, India **Class XII (Science)** - 2013 78.6% | **Class X** - 2011 CGPA: 9.4/10

SKILLS

Languages : Python, MATLAB, SQL

ML / AI : XGBoost, Random Forest, Gradient Boosting, Linear & Logistic Regression, KNN, TensorFlow, PyTorch, Scikit-Learn, LLMs (LangChain, OpenAI APIs, LLaMA), RAG, NLP, Prompt Engineering.

Data & Analytics : Pandas, NumPy, PySpark, Seaborn, Matplotlib, Power BI, REST API, FastAPI

Cloud & MLOps : AWS SageMaker, Azure, CI/CD (Jenkins, GitLab), Docker

Fundamentals : Probability & Statistics, Linear Algebra, OOP, Data Structures & Algorithms, System Design

Tools : Git, JIRA, Confluence, Simulink

WORK EXPERIENCE

Senior Data Science Engineer [SDE 3]

BMW Techworks India | Ex-Mercedes-Benz R&D India

August 2017 – Present [9 years]

- Led a team of 5, delivering end-to-end ML and deep learning solutions — from requirement gathering with stakeholders in Germany to production deployment via CI/CD pipelines.
- Developed and deployed predictive models (XGBoost, Gradient Boosting, regression) for battery aging forecasting and thermal management optimization in electric vehicles.
- Built LLM-based AI agents using RAG, LangChain, and OpenAI APIs to automate automotive specification workflows, including code generation and validation.
- Designed data pipelines processing large-scale vehicle telemetry data, applying statistical modelling, feature engineering, and vector database retrieval.
- Owned full application lifecycle — architecture, cross-platform Python–MATLAB integration, automated testing, and release management through Jenkins and Git.
- Collaborated closely with cross-functional teams across India and Germany, managing projects using JIRA, Confluence, and Gantt-based planning.

PROJECTS

BMW Techworks India [BMW Group]

December 2024 – Present [1.6 years]

AI Assistant for ECU Network Communication

[Role : GenAI, RAG, LLM Agents]

- Built an LLM-based assistant that converts Jira change requests into valid SyML specification code for BMW's vehicle E/E architecture, replacing a manual and error-prone workflow for network engineers.
- Implemented a RAG pipeline with vector DB retrieval of past gold-standard changes to guide code generation, followed by automated grammar validation using Bazel.
- Automated the complete flow from natural language input to Git commit and PR creation, significantly reducing turnaround time and domain expertise needed for spec changes.

Camera De-calibration Impact on 3D Object Detection

[Role: Deep Learning, Computer Vision, BEVFormer]

- Modified BEVFormer to evaluate 3D object detection robustness under camera extrinsic de-calibration (simulating side-mirror displacement from pedestrian/cyclist impact) on the nuScenes dataset.
- Demonstrated that even $\pm 5^\circ$ de-calibration of a single camera reduced mAP by $\sim 28\%$ ($0.264 \rightarrow 0.19$), with multi-camera perturbations causing up to 73% degradation — highlighting the need for online recalibration in ADAS systems.

Mercedes-Benz R&D India

August 2017 – December 2024 [7.5 years]

Cell Ageing Analysis

[Role : EDA, Classification, Modelling and Visualization]

- Developed an XGBoost-based system to predict battery cell aging across 15 vendors and ~ 300 cell variants, using gradient optimization and statistical modelling to forecast degradation up to 10 years ahead under varying climatic, range, and performance conditions.
- Applied matrix-based feature engineering and Bayesian classification on cell measurement data to sort battery cells into Mercedes-Benz AMG performance vehicle categories.
- Streamlined cell selection for the diagnosis team, reducing cost and evaluation time via data-driven hypothesis testing.

Thermal Model Configuration Analysis

[Role : EDA, Classification and Modelling + Simulation]

- Built a battery thermal management optimization pipeline for EVs by combining field data with Gradient Boosting (classification) and regression modelling for thermal cooling processes, deployed on AWS SageMaker.
- Reduced model creation time from 720 hours to under 5 hours using supervised and unsupervised learning, minimizing manual intervention and human error in model generation.
- Verified model outputs by running Simulink simulations in MATLAB against real-world field measurements.

PREREQUISITE COURSES COMPLETION

B.E. in Computer Science & Engineering: The National Institute of Engineering, Mysuru (VTU) | 2013–2017

Prerequisite Requirement	Course Completed	Code	Semester	Grade
Discrete Math for Computer Science	Discrete Mathematical Structures	CS0406	3rd	B
Introduction to Programming	Computer Concepts and C Programming	CS0401	2nd	B
Data Structures	Data Structures with C	CS0404	3rd	C
Algorithm and Complexity	Analysis and Design of Algorithms	CS0408	4th	B
Introduction to Data Mining	Introduction to Data Mining	CS0201	8th	A
Linear Algebra and Matrix Theory	Engineering Mathematics - I	MA0401	1st	B
Introduction to Probability and Statistics	Engineering Mathematics - IV	MA0404	4th	C

Notes:

- Linear Algebra covered: Gauss elimination, Eigenvalues & Eigenvectors, Diagonalization, Linear Transformations, Quadratic Forms (VTU syllabus).
- Probability & Statistics covered: PDF/PMF, Binomial/Poisson/Normal distributions, Hypothesis testing, Chi-square test, Markov Chains (VTU syllabus).
- Probability, statistics, and data structures extensively applied in professional practice across 9 years of ML model development, feature engineering, and algorithm design.

Grading scale: S (≥ 90) =10, A (75–89) =9, B (60–74) =8, C (50–59) =7

ACHIEVEMENTS

- 1st Place, Internal Hackathon — AI-based driver recognition system using facial and seating position detection for personalized vehicle settings, Mercedes-Benz R&D India | 2023
- 2nd Place, Internal Hackathon — Radar-guided self-correction system for ADAS camera alignment after external impact, Mercedes-Benz R&D India | 2024

CERTIFICATION

Deep Learning Specialization by Andrew NG — DeepLearning.AI (Coursera, Verified) | 2026

Python Masterclass by Tim Buchalka Programming Academy (Udemy, Verified) | 2021

Data Science: EDA, ETL, Classification, Modelling | Power BI | MATLAB-Simulink | German A1