

MITESH KUMAR

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SUMMARY

Data Science Master's student with hands-on experience building **automated data pipelines** and **interactive dashboards** for large-scale research experiments, seeking to apply this expertise to interdisciplinary environmental neuroscience research.

EDUCATION

UNIVERSIDAD POLITÉCNICA DE MADRID

Master of Science, Data Science (Erasmus Semester)

Madrid, Spain

(February 2026 – June 2026)

FRIEDRICH-ALEXANDER-UNIVERSITÄT ERLANGEN-NÜRNBERG

Master of Science, Data Science (Grade: 2.0)

Erlangen, Germany

(October 2024 – Present)

AMITY UNIVERSITY

Bachelor of Science in Mathematics (Grade: 1.8)

Noida, India

(July 2020 – June 2023)

EXPERIENCE

UNIVERSITY OF REGENSBURG

Student Research Assistant

Regensburg, Germany

(December 2025 – Present)

Machine Learning for Side-Channel Analysis

- Supporting the design of **experimental pipelines** for data acquisition and ML-based signal analysis, including robustness testing under realistic measurement conditions (noise, misalignment).
- Reviewing and synthesizing literature on deep learning-based analysis methods to inform **pipeline design and methodology**.

FRIEDRICH-ALEXANDER-UNIVERSITÄT ERLANGEN-NÜRNBERG

Student Research Assistant

Erlangen, Germany

(May 2025 – Present)

Transregio 154: Mathematical modeling, simulation and optimization using the example of gas networks.

- Developed and implemented a non-convex nominal model in **Python using Pyomo and Gurobi** to maximize the social welfare of a gas network subject to physical transport constraints.
- Engineered a **Python workflow** to generate a large-scale time series dataset by simulating and solving thousands of optimal network states.
- Currently developing a bicriteria optimization model to integrate **data-driven explainability**, formulating a novel objective that balances economic efficiency with similarity to historical and time-adjacent solutions.

PROJECTS

AUTOMATED PIPELINE & DASHBOARD FOR BEHAVIORAL EXPERIMENT DATA

- Built an **end-to-end pipeline automating ingestion, cleaning, and processing** of simulated reaction-time/behavioral task data, replicating typical psychological research paradigm outputs.
- Implemented automated **quality-control checks** (outlier detection, missing-trial handling, response-time filtering) to ensure clean data for downstream analysis.
- Developed an **interactive Streamlit dashboard** visualizing key behavioral metrics (accuracy, reaction time distributions, condition comparisons) for real-time exploration of experimental results.
- Designed the pipeline to be **modular and reusable** across experimental paradigms, minimizing manual intervention in data processing.

OPEN-SET FACE RECOGNITION & ROBUST TRACKING PIPELINE

- Built a pipeline for **continuous identity tracking** under real-world conditions (occlusions, appearance changes), combining deep embedding-based recognition with a fallback tracker for uninterrupted continuity.
- Achieved **90% validation accuracy** distinguishing known from novel identities, using clustering-based methods to handle previously unseen cases.
- Designed the system to remain **robust to noisy, incomplete, or interrupted input** — a common challenge in real-world experimental data collection.

SKILLS

Technical Skills: Python, SQL, C++, LaTeX, PyTorch, TensorFlow, Scikit-learn, Keras, Pyomo, Gurobi, Power BI, Pandas, NumPy, Matplotlib, Streamlit, Git, Microsoft Office

Languages: English (IELTS C1), Hindi (Native), German (A1)