ANSHID ABOOBACKER

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PROFESSIONAL SUMMARY

AI / Machine Learning Engineer with a strong mathematical foundation from a PhD in Mathematics (Topological Dynamics and Ergodic Theory). Experienced in building end-to-end machine learning pipelines including data preprocessing, feature engineering, model training, evaluation, and deployment using Python, TensorFlow, PyTorch, and scikit-learn. Skilled at translating mathematical theory into practical ML systems and optimization-driven models. Interested in developing intelligent systems that combine rigorous mathematics, scalable computation, and real-world decision making.

TECHNICAL SKILLS

Programming & Tools: Python, SQL, NumPy, Pandas, Jupyter, Git, GitHub, Streamlit

Machine Learning: Supervised Learning, Deep Learning, Feature Engineering, Model Evaluation, Cross Validation

Mathematics: Linear Algebra, Calculus, Probability, Statistics, Optimization, Dynamical Systems

ML Frameworks: PyTorch, TensorFlow, scikit-learn

Formal Methods: Lean Proof Assistant

AI / MACHINE LEARNING PROJECTS

Placement Prediction System GitHub

- Built an end-to-end machine learning application to predict student placement outcomes using CGPA and IQ features.
- Designed a complete ML pipeline including data cleaning, feature preprocessing, exploratory data analysis, feature scaling, model training, and inference.
- Trained and evaluated a Logistic Regression classifier achieving ˜80% accuracy, with analysis of feature importance and decision boundary visualization.
- Implemented preprocessing techniques including missing value imputation, label encoding, and numerical format standardization using Pandas and Scikit-learn.
- Developed a production-style prediction service using Flask with REST API support for real-time inference.
- Built and deployed an interactive web application enabling users to obtain placement predictions with probability scores.
- Serialized trained models and preprocessing pipelines using Joblib for reusable deployment-ready inference workflows.
- Added automated API testing and structured project organization following modular ML engineering practices.

Tech Stack: Python, Scikit-learn, Pandas, NumPy, Flask, Joblib, Bootstrap, Gunicorn

AI Book Scanner Automation GitHub

- Designed and implemented an AI-powered automation pipeline using Make.com to extract book metadata from images sent via Telegram.
- Built a Telegram bot workflow that captures uploaded book photos, downloads image files, and processes them through the Google Gemini Vision API.
- Engineered structured prompts to extract book title, authors, and genre as machine-readable JSON outputs.

- Integrated Google Sheets API to automatically maintain a searchable personal library database from scanned books.
- Developed JSON parsing and data transformation workflows, including response validation and author field normalization.
- Debugged multimodal API integration issues involving markdown-formatted JSON responses, base64 image encoding, and Make expression mappings.
- Improved automation reliability by enforcing strict JSON output formatting for downstream processing pipelines.
- Proposed future extensions including Google Books API verification and multi-book detection from bookshelf images.

  Tech Stack: Make.com, Telegram Bot API, Google Gemini Vision API, Google Sheets API, JSON, HTTP APIs

PROFESSIONAL EXPERIENCE

Guest Faculty – BITS Pilani, Work Integrated Learning Programme 2025 – 2026

- Designed and delivered courses on Linear Algebra, Calculus, and Optimization Techniques for Machine Learning to cohorts of working professionals (30–100 learners).
- Developed Python-based Jupyter notebooks demonstrating machine learning algorithms and optimization techniques using NumPy and scikit-learn.
- Guided students in applying mathematical modeling and statistical reasoning to real-world data problems.

Teaching Assistant – Department of Mathematics, BITS Pilani 2020 – 2025

- Conducted tutorials on probability, statistics, and optimization concepts foundational to machine learning.
- Developed computational exercises using Python for statistical modeling and data analysis.
- Mentored students in problem solving and algorithmic thinking across advanced mathematics courses.

EDUCATION

PhD in Mathematics - BITS Pilani, Hyderabad Campus 2020 – 2026 (Submitted)
Research Area: Topological Dynamics and Ergodic Theory

MSc in Mathematics - University of Hyderabad 2018 – 2020

BSc in Mathematics - University of Calicut 2015 – 2018

CERTIFICATIONS

- TensorFlow Developer Professional Certificate – DeepLearning.AI (2026)
- Google AI Professional Certificate – Google (2026)
- Machine Learning in Production – DeepLearning.AI (2025)
- Mathematics for Machine Learning and Data Science – DeepLearning.AI (2025)