MUHAMMED MISHAL

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PROFESSIONAL SUMMARY

MCA graduate with an AI/ML Developer internship, building Python machine learning and computer vision applications. Hands-on with DINOv2 and PyTorch image embeddings, FAISS similarity retrieval, and FastAPI backends with PostgreSQL/pgvector, applied to a dermatology decision-support system that helps review similar cases across 198 disease classes.

TECHNICAL SKILLS

Programming: Python, SQL
Machine Learning & Deep Learning: PyTorch, scikit-learn, EDA, feature engineering, model evaluation, statistical analysis
Computer Vision & Similarity Search: DINOv2, OpenCV, image embeddings, FAISS, vector similarity search
Backend & Databases: FastAPI, REST APIs, PostgreSQL, pgvector, Supabase, MySQL, SQLite, Django
Data & Tools: Pandas, NumPy, Matplotlib, Seaborn, Streamlit, Git, GitHub, Linux, AWS EC2, AWS S3
Core: Data Structures & Algorithms, OOP, DBMS

WORK EXPERIENCE

Blue Cast Technologies — AI/ML Developer Intern January 2026 – April 2026

- Contributed to an image-based dermatology decision-support system, extracting 768-dimensional DINOv2 (ViT-Base) embeddings across the 198-class SD-198 dataset.
- Implemented FAISS cosine-similarity nearest-neighbor retrieval and compared three approaches: mean-vector centroid, kNN-FAISS, and CLS-token representation.
- Built FastAPI REST APIs and integrated Supabase PostgreSQL with pgvector for vector storage and similarity search across the image-to-prediction pipeline.

PROJECTS

AI-Powered Dermatology Decision Support System *(DINOv2, FAISS, FastAPI, pgvector)*

- Clinician-facing tool that returns ranked similar dermatological conditions with High/Moderate/Low confidence indicators to support case review.
- Pipeline: image upload → embedding extraction → vector search → ranked output, served through FastAPI.

AI-Based Productivity & Role Prediction System *(scikit-learn, Streamlit)*

- Trained Random Forest and Logistic Regression models to predict employee productivity and roles, reaching approximately 87% classification accuracy.
- Performed EDA, feature engineering and model evaluation; saved models with joblib and built a Streamlit app for real-time prediction.

Additional Projects: Build Track Pro (Django, MySQL contractor management); Fresh Cart (PHP, JavaScript, MySQL e-commerce); Drop for Life (blood donation coordination platform).

EDUCATION

Master of Computer Applications (MCA) 08/2024 – 07/2026
TKM College of Engineering | GPA: 8.33/10
Bachelor of Computer Applications (BCA) 08/2021 – 04/2024
Musaliar College of Arts and Science

CERTIFICATIONS

- Python Data Science, Machine Learning & AI
- Data Engineering: SQL, Python & Spark
- Microsoft Azure AI Essentials: Workloads and Machine Learning on Azure — LinkedIn
- Deep Learning Essentials with Keras — IBM
- Java Certification — NPTEL