

Mohammed Mutahar

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EDUCATION

Northeastern University

Master of Science in Computer Science

Boston, MA

Aug. 2025 – May 2027

Presidency University

Bachelor of Technology in Artificial Intelligence and Machine Learning

Bangalore, India

Aug. 2020 – Nov 2024

EXPERIENCE

Deep Learning Essentials Lead

Dec. 2025 – Apr. 2026

AINU

Boston, MA

- Designed comprehensive curriculum materials and capstone project for 6-week Deep Learning Essentials bootcamp covering 7+ core topics (CNNs, Transformers, LSTMs, RNNs, Generative AI, MLPs, and backpropagation)
- Drafted presentation materials and evaluated student projects for university-level deep learning course, supporting professor-led instruction for 20+ selected students

Artificial Intelligence Engineer

Nov. 2024 – Aug. 2025

Reap Studio

Bangalore, India

- Engineered image generation workflows for a platform requiring high-fidelity facial consistency under strict latency constraints; optimized model performance and cold start latency, achieving 80%+ facial match accuracy within 65 seconds
- Built a pose alignment pipeline for a virtual try-on system requiring accurate garment-to-user rendering, engineering outfit visualization models that delivered 95%+ visual consistency within the first two inference passes
- Designed a Power BI dashboard integrated with Cloudera to automate analytics data retrieval for stakeholders, eliminating 84 hours of manual analytic work per week

Regulatory Advisory Intern

Feb. 2023 – Aug. 2023

Agarwal Real Estate Group

Bangalore, India

- Developed an IoT beacon mesh (MXE-200i) for a mall parking structure, engineering an end-to-end automated billing system that captured license plates and dispatched usage-based payment requests directly to customer phone numbers at entry
- Integrated payment card readers and camera sensors into the parking system to automate license plate recognition, reducing manual ticketing headcount by 75% within six months

Artificial Intelligence Intern (Research)

Nov. 2022 – Dec. 2022

Indian Institute of Technology Kanpur

Kanpur, India

- Built anomaly detection and robotic process automation systems for law enforcement and enterprise clients using Python and Blue Prism, flagging suspicious behavioral signals across 7 million customer records to support a money laundering investigation

PROJECTS

Conductor | *Multi-Agent Orchestration System for Deep Research*

- Architected an asynchronous multi-agent research engine using LangGraph and Gemini, scaling execution efficiency by orchestrating 4 specialized AI agents (Planner, Researcher, Synthesizer, Writer) via a directed state graph
- Engineered a fault-tolerant distributed pipeline using FastAPI, Celery, Redis, and Postgres, eliminating process downtime through background task queuing and state checkpointing that enables seamless recovery from system crashes

AffectSync | *Affective Data Infrastructure for Emotionally-Aware Generative AI*

- Developed real-time affective data collection pipeline, synchronizing webcam-based facial emotion detection with video playback timestamps at 10 FPS using DeepFace and OpenCV on CPU-constrained hardware
- Engineered a multi-phase dataset generation system that aligns emotion timelines with Whisper generated transcripts to produce structured JSON datasets, pairing viewer emotional response with video dialogue for downstream model training

HalfCourt | *NBA's Halftime Predictive Analysis Agent*

- Engineered a modular agentic AI prediction pipeline with strict player-level feature engineering, benchmarking Gradient Boosted Trees, DNN, and Logistic Regression behind a shared abstract interface to enable model swaps without modifying downstream components
- Integrated Gemini 2.0 LLM via LangChain to consume model inference outputs and surface narratives through FastAPI, forming a complete end-to-end sports analytics agent from raw NBA API ingestion to human-readable commentary

TECHNICAL SKILLS

AI/ML Frameworks: PyTorch, TensorFlow, Keras, Scikit-Learn, ONNX Runtime, TorchServe

ML Concepts and Methods: Deep Learning (Supervised/Unsupervised/Reinforcement Learning), Computer Vision, Generative AI (Diffusion Models, Multimodal Agents), Hyperparameter Tuning, Fine-Tuning LLMs (LoRA), Transfer Learning, Model Evaluation and Monitoring

LLM and Agentic AI: LangChain, LangSmith, LlamaIndex, RAG (RAGAS), Vector Databases (Filtering, Embeddings), Prompt Engineering, Anthropic AI (Claude API)

Data and Systems: Python (NumPy, pandas, OpenCV), Node.js, REST API, OAuth, NoSQL, MongoDB, SQL, Data Preprocessing and Analytics, ETL, Streamlit

Infrastructure and DevOps: AWS SageMaker, CI/CD (Git, GitHub), Automation (ComfyUI, Ollama), HuggingFace Models

Certificates: Certified AWS Machine Learning, Certified Microsoft Technology Associate, Matplotlib