Hassan Ali

AI / ML Engineer

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PROFILE

AI Engineer with hands-on experience in developing innovative AI solutions across healthcare and automation. Skilled in natural language processing, machine learning, computer vision and generative AI, with a focus on real-world problem-solving.

TECHNICAL SKILLS

- **Programming Languages:** Python, C, C++, SQL
- **Web Development:** React.js, FastAPI, Node.js, HTML5, CSS3
- **AI & Machine Learning:** Natural Language Processing (NLP), Computer Vision, Generative AI, Large Language Models (LLMs), Deep Learning
- **Frameworks & Libraries:** TensorFlow, OpenCV, Scikit-learn, Pandas, NumPy, Keras, Hugging Face, Torch, Lang chain, NLTK,
- **Databases:** MongoDB, MySQL
- **Cloud & DevOps:** AWS, Docker, Git, GitHub
- **Tools & Platforms:** Jupyter Notebook, Google Colab, VS Code
- **Languages:** English (Fluent), Urdu (Native)

PROJECTS

Diabetic Retinopathy Detection & Grading — *Medical Imaging | Computer Vision | ViT*

PyTorch · TensorFlow · Keras · OpenCV · Grad-CAM Jan 2024 – Apr 2024

- Built a 5-class retinopathy grading system using Vision Transformer (ViT-B/16) and EfficientNet-B4.
- Built an image classification model using CNNs to detect stages of diabetic retinopathy.
- Used preprocessing, augmentation, and transfer learning (ResNet, EfficientNet) for model improvement.
- Evaluated using accuracy, precision, recall, and confusion matrix.

Handwritten Digit Recognition — *CNN | Deep Learning | MNIST*

Python · TensorFlow · Keras · NumPy Oct 2023 – Nov 2023

- Designed and trained a 5-layer CNN (Conv → BN → Pool → Dropout → Dense) using TensorFlow/Keras to classify handwritten digits from the MNIST dataset, achieving 99.1% test accuracy in under 10 epochs.
- Implemented full pipeline: data normalisation, one-hot encoding, real-time data augmentation, Adam optimiser with learning rate decay, and early stopping — reducing overfitting by 12% vs. baseline.
- Applied Dropout (0.3) and Batch Normalisation for regularisation; visualised training curves and per-class confusion matrix for performance analysis.

EDUCATION

BS Artificial Intelligence — National Textile university Expected Jun 2027

6th Semester (Complete) · GPA: 3.4 / 4.0

CERTIFICATIONS & TRAINING

Deep Learning Specialization — DeepLearning.AI / Coursera (Andrew Ng)	In progress — 2026
Machine Learning Specialization — Stanford Online / Coursera	2025
fast.ai: Practical Deep Learning for Coders	2024
Hugging Face NLP Course — Hugging Face	2024

ADDITIONAL

Soft skills: Technical Documentation & Reporting · Stakeholder Presentations · Cross-functional Collaboration · Agile / Scrum