

Raof Raza Khan

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AIML Specialist with 4+ years of hands-on experience in machine learning, deep learning, and **end-to-end model deployment** using Python. Skilled at developing **lightweight, high-performance solutions** for edge devices and collaborating effectively across teams. Experienced in **computer vision, object detection**, and **healthcare-focused AI** applications. Looking to leverage my **AI expertise** in a mission-driven setting to deliver impactful, **innovative solutions**.

SKILLS

- **Deep Learning & Computer Vision:** CNNs (YOLOv5, ResNet, MobileNet), object detection, image segmentation, attention mechanisms, model optimization
- **ML Frameworks & Libraries:** PyTorch, TensorFlow/Keras, Scikit-learn, NumPy, Pandas
- **Programming & Data:** Python, SQL, data preprocessing, feature engineering, model evaluation
- **Tools & Workflow:** Git/GitHub, Jupyter/Colab, hyperparameter tuning (Optuna and Keras Tuner)
- **Leadership & Collaboration:** Technical training, cross-functional communication, project coordination

EXPERIENCE

- **Senior Trainer (Cognitive Science)**
NIMS University, Apr 2025 – Present
 - Designed and executed AI-driven research projects using EEG, EMG, and EOG signals via Kaptics BCI kit.
 - Developed real-time AI demos integrating BCI with cognitive experiments.
- **Freelance Data Science Consultant**
Self-Employed, [July 2022] – Present
 - Implemented YOLOv5 object detection (PyTorch) for a travel operator, achieving **95%+ accuracy** and reducing ticket evasion to boost revenue.
 - Engineered segmentation and churn prediction pipelines (K-Means, **XGBoost**), leading to a **15% increase** in repeat bookings through targeted marketing campaigns.
- **Technical Trainer (AI/ML)**
Xebia IT Architects India Pvt. Ltd., August 2022 – December 2024
 - Delivered **1,000+ hours** of advanced ML lectures (CNNs, RNNs, transformer-based architectures) to **300+ learners**.
 - Organized hackathons to drive collaboration, hands-on prototyping, and efficient model deployment.
 - Consistently received high satisfaction ratings for curriculum design and practical use-case demonstrations.
- **Executive Engineer**
Archi Civilian (Sep 2019 – Feb 2021)
 - Conducted **topographical surveys**, collaborating with cross-functional teams on civil engineering and GIS projects.
 - Gained foundational experience in **remote sensing** and geospatial data analysis.

KEY PROJECTS

- **Lightweight Machine Learning Models for Age Estimation on Edge Devices** [Link to Dissertation](#)
 - Explored resource-efficient machine learning models for age estimation, focusing on deployment feasibility on edge devices, using the Adience dataset.
 - Implemented advanced preprocessing and feature engineering, achieving an **88.88% accuracy** in binary age classification and **74.32%** in six-group age classification.
 - Presented comprehensive model evaluations, offering holistic insights, and setting a benchmark for future age estimation tasks on edge devices.
- **Deep Learning Pipeline for Medical Image Abnormality Detection (Independent Client Project, 2024)**
 - Developed a hybrid deep learning system to classify radiographs across multiple anatomical categories and detect abnormalities.
 - Implemented image preprocessing → convolutional + squeeze-and-excitation feature extraction → dual-task output (classification + abnormality detection).
 - Achieved **97% classification accuracy**, **89% abnormality detection accuracy**, **ROC-AUC 0.94**, **high sensitivity (0.86)**, **specificity (0.89)**, Cohen's kappa 0.77.
 - Independently managed full project lifecycle, from data preparation and model design to evaluation and final deliverables for a healthcare research client.

EDUCATION

- **MSc with Distinction in Data Science**, Liverpool John Moores University, England, 2021-2023.
- **Exec. PG Diploma in Data Science**, IIIT-B, 2021-2022, (CGPA: 3.82/4.0)
- **B. Tech.** 2015 – 2019