# MUHAMMAD IZHAR

**AI/ML Engineer | Deep Learning | Federated Learning**

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## Professional Summary

Results-driven AI/ML Engineer with hands-on experience in Deep Learning, Federated Learning, and Computer Vision. Currently working at Stemeta AI, applying advanced ML techniques to solve complex problems. Skilled in building scalable AI models, deploying them with Docker and Azure, and developing end-to-end intelligent systems.

## Technical Skills

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|---|---|
| **Machine Learning:** | TensorFlow, PyTorch, Scikit-learn, OpenCV, Pandas, NumPy, NLP |
| **Languages:** | Python, C++, SQL (MySQL), HTML, CSS, Bootstrap |
| **MLOps & Cloud:** | Docker, Azure Containers, Git, Flask, REST APIs, Google Colab |
| **Key Concepts:** | Federated Learning, Deep Learning, Data Mining, Computer Vision, Big Data |

## Work Experience

**AI/ML Engineer**                                                     **Oct. 2024 – Present**
*Stemeta AI*                                                                 *Islamabad, Pakistan*
- Developing and optimizing machine learning pipelines to enhance model accuracy and inference speed.
- Collaborating with cross-functional teams to integrate AI solutions into core product features.
- Implementing scalable MLOps practices for efficient model deployment and monitoring.

**AI/ML Intern**                                                       **Aug. 2024 – Sep. 2024**
*InterDev Pvt Ltd*                                                                      *Remote*
- Designed and implemented ML models for structured data analysis to improve business intelligence.
- Built a **Sports Recognition System** using Deep Learning (OpenCV, TensorFlow) to classify video activities.
- Collaborated in code reviews and optimized deployment pipelines for machine learning models.

**AI Intern (Federated Learning Project)**                             **Jan. 2024 – Mar. 2024**
*National Centre for Physics (NCP)*                                           *Islamabad, Pakistan*
- Spearheaded a Final Year Project on **Federated Learning-based energy load forecasting**.
- Engineered distributed models and managed Dockerized deployment for scalable analysis.
- Conducted real-time energy data simulations, analyzing consumption patterns for residential and industrial sectors.

**Frontend Developer Intern**                                          **July 2022 – Aug. 2022**
*XtreamSoft*                                                                   *Peshawar, Pakistan*
- Developed responsive, user-friendly web interfaces using HTML, CSS, and Bootstrap.
- Assisted in UI debugging and performance improvements for client applications.

## Key Projects

**Short-Term Load Forecasting** | *Python, TensorFlow, Federated Learning*
- Designed a privacy-preserving federated learning system to forecast energy loads across multiple sectors.
- Integrated alert mechanisms to predict blackout risks, enhancing grid reliability.

**NLP Suite: Next Word Predictor & Humanizer** | *LSTM, RNN, NLP*
- Developed a Next Word Predictor using LSTM/RNN architectures for accurate text generation.
- Created an AI Text Humanizer to refine machine-generated content into natural language.

**Network Security Sweeper** | *Python, Networking*
- Built a Python tool to scan IP ranges, detecting active hosts, open ports, and MAC addresses.

**Pharmacy Inventory Management System** | *Django, MySQL*
- Developed a full-stack inventory system for real-time stock tracking and database management.

## Education

**Pak-Austria Fachhochschule (PAF-IAST)** <span style="float:right">**Aug. 2021 – 2025**</span>
*BS Artificial Intelligence (CGPA 3.2)* <span style="float:right">*Haripur, Pakistan*</span>
- **Relevant Coursework:** Machine Learning, Deep Learning, NLP, Computer Vision, Data Mining, Big Data, Info Security.

**BISE SWAT** <span style="float:right">**Apr. 2018 – Apr. 2020**</span>
*Intermediate (HSSC) – Pre-Medical (83.54%)* <span style="float:right">*Swat, Pakistan*</span>

## Certifications & Awards

- **AI For Everyone:** DeepLearning.AI (2025) – Grade: 86.50%. Gained strong understanding of AI strategy.
- **Federated Learning Innovator:** Recognized by NCP Islamabad for project leadership (2024).
- **Python for Everybody Specialization:** University of Michigan (Coursera).
- **Frontend Developer of the Month:** XtreamSoft (2022).
- **Languages:** Urdu (Fluent), English (Professional), Pashto (Native).