**Hasan Waqar**

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**Career Objective / Profile:**

Aspiring Artificial Intelligence engineer with a strong foundation in computer vision, deep learning, and software development. Motivated to apply technical expertise to real-world challenges through research-driven and data-centric projects.

**Education:**

**Bachelor of Science in Artificial Intelligence**, National University of Computer and Emerging Sciences (FAST), Islamabad, Pakistan  
Aug 2022 – Present

Relevant Courses: Object-Oriented Programming (OOP), Data Structures and Algorithms (DSA), Programming for AI (Numpy, Pandas, Matplotlib, NLTK), Image Classification and OCR, Software Engineering, Calculus I & II

**Skills:**

• Python (NumPy, Pandas, Matplotlib, OpenCV, PyTorch)  
• Machine Learning & Deep Learning  
• Computer Vision & Image Processing  
• C++ & Object-Oriented Programming  
• Data Structures and Algorithms  
• Web Development (Basic)

**Experience / Internships:**

**Intern, Enterprise Solutions Department**, Nayatel — Islamabad, Pakistan (Oct 2023 – Nov 2023)  
• Developed a web-based application for face detection using computer vision techniques.  
• Implemented efficient algorithms to locate human faces in images and videos.

**Projects / Research:**

**Built-Up Fractional Mapping with Deep Learning:** Implemented deep learning models (FCN, U-Net, Attention U-Net) on Sentinel-2 imagery to map built-up areas. Used GDAL for geospatial data and applied Huber Loss for improved prediction accuracy.

**Chess AI with Alpha-Beta Pruning:** Developed an AI bot for chess using the Minimax algorithm with alpha-beta pruning and board evaluation heuristics.

**Text & Image Similarity Engine:** Built a system for retrieving similar text and images using tokenization and feature-based similarity matching.

**Street Fighter AI Bot:** Trained an ML model to predict and counter opponent moves in real-time, integrated into a custom game engine.

**Wall Breaker Game:** Created a 2D arcade game in C++ with collision logic, scoring system, and OOP design principles.

**Forex Price Prediction System:** Built a real-time EUR/USD forecasting model using LightGBM and MT5 data. Predicted short- and mid-term price movements and visualized performance through live charts.

**Achievements / Extracurricular Activities:**

• Participated in multiple AI and software development projects demonstrating teamwork and research skills.  
• Contributed to university-level hackathons and coding competitions.  
• Engaged in continuous learning through online AI and ML courses.