

Abdul Rafay Ashfaq

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EXPERIENCE

Machine Learning Intern DevelopersHub Corporation	<i>Jun 2025 – Jul 2025</i>
• Developed RAG-based conversational AI agents utilising LangChain for medical and mental health diagnostics.	<i>Remote</i>
• Fine-tuned LLMs and BERT transformers using the HuggingFace Trainer API to facilitate real-time user interaction.	
• Executed end-to-end data pipelines, including Exploratory Data Analysis (EDA) and data cleaning, on clinical datasets to identify key features for heart disease classification.	
• Trained regression models for house/stock price forecasting, implementing time-series analysis on preprocessed metrics.	
Web Developer Intern Premier NX	<i>Jun 2025 – Aug 2025</i>
• Architected responsive, user-friendly frontend interfaces for an academic portal utilising PHP Laravel.	<i>Lahore, Pakistan On-site</i>
• Integrated full-stack CRUD functionality, ensuring real-time data synchronisation with a MySQL backend.	
Python Developer Intern Softsines	<i>May 2025 – Jul 2025</i>
• Completed comprehensive data science training, mastering Pandas and NumPy for data preprocessing.	<i>Remote</i>

EDUCATION

Bachelor of Science (B.S.) in Computer Science FAST National University of Computer & Emerging Sciences	<i>Aug 2027</i>
• Coursework: Data Structures, Database Systems, Design & Analysis of Algorithms, Object-Oriented Programming, Computer Networks, Artificial Intelligence, Web Programming, Software Design & Analysis, Information Security	<i>Islamabad, Pakistan</i>

PROJECTS

Game-Playing Agent for TORCS
• Automated a car racing simulation using PyTorch and scikit-learn, utilising a Random Forest model to achieve autonomous driving based on telemetric data.
• Trained the model on sensor-based input to optimise speed and steering in dynamic racing environments.
• Executed real-time decision-making and performance evaluation to enhance accuracy and responsiveness.
Ultimate Tic-Tac-Toe (9x9)
• Developed a player vs. AI Ultimate Tic-Tac-Toe game in Python, incorporating Minimax with Alpha-Beta Pruning for efficient decision-making.
• Applied advanced Constraint Satisfaction Problem (CSP) techniques to enforce nested game rules across 81 game cells.
• Refined user experience through an interactive Tkinter GUI, featuring dynamic state tracking and visual feedback.

XONIX

- Programmed a GUI-based arcade game with single-player and two-player modes utilising C++ and SFML.
- Implemented algorithms for player movement, dynamic territory capturing, and enemy AI in single-player mode.
- Optimised user experience with responsive controls, real-time scoring, and engaging visual feedback.

Hospital Management System

- Built a full-stack HMS with a React frontend and Node.js + MongoDB backend.
- Developed comprehensive modules for patient management, appointments, and medical records.
- Implemented secure user authentication and role-based access control using JSON Web Tokens (JWT).

Personal Website

- Designed a personal web portfolio with HTML, CSS, and JavaScript. Hosted via GitHub Pages.
- Integrated external pull requests to enhance the website's content and cross-device compatibility.

SKILLS

Web Development Tools: HTML, CSS, JavaScript, React, Node.js, MongoDB, PHP, Laravel

Game Development Tools: Unity, SFML (Simple & Fast Multimedia Library)

Programming Languages: C++, Python, Java, SQL (MySQL), x86 Assembly

CERTIFICATIONS

Google AI Essentials Specialisation – Google • Introduction to Artificial Intelligence – University of Illinois Urbana-Champaign • Introduction to Generative AI for Developers with Copilot – Microsoft