

# Abdul Rafay Ashfaq

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Lahore, Pakistan

## EXPERIENCE

<b>Machine Learning Intern</b> <b>DevelopersHub Corporation</b>	<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.	
<b>Web Developer Intern</b> <b>Premier NX</b>	<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.	
<b>Python Developer Intern</b> <b>Softsines</b>	<i>May 2025 – Jul 2025</i>
• Completed comprehensive data science training, mastering Pandas and NumPy for data preprocessing.	<i>Remote</i>

## EDUCATION

<b>Bachelor of Science (B.S.) in Computer Science</b> <b>FAST National University of Computer &amp; Emerging Sciences</b>	<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

<b>Game-Playing Agent for TORCS</b>	
• 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.	
<b>Ultimate Tic-Tac-Toe</b>	
• Developed a player vs. AI Ultimate Tic-Tac-Toe game (9x9) in Python, incorporating the Minimax Algorithm 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.	
<b>XONIX</b>	
• 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.	
<b>Hospital Management System</b>	
• 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).	
<b>Personal Website</b>	
• 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