

Muhammad Rehman Ashraf

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EDUCATION

PIEAS University

Bachelor in Computer Science

Islamabad, Pakistan

Sep. 2022 – Sep. 2026

DBS Chishtian

Pre-Engineering

Chishtian, Pakistan

Aug. 2020 – May 2022

RESEARCH EXPERIENCE

Undergraduate Research Assistant

PIEAS University

Dec 2022 – Present

Islamabad, Pakistan

- Worked on **computer vision and 3D motion capture**, mapping human body movements onto 3D models using **Python, OpenCV, and Blender**.
- Designed and developed a complete **teacher–student tuition platform** using **ASP.NET and SQL**, including secure user login and database management.
- Currently building a **computer vision-based fitness training coach** that observes user exercises through a camera and provides real-time guidance (Final Year Project).

PROJECTS

Real-Time Traffic Counter | *YOLOv8, DeepSORT, FastAPI, OpenCV, PyTorch*

Aug. 2025

- Built a system to detect and count vehicles in real time with a web interface, using **FastAPI** for the backend and **YOLOv8 + DeepSORT** for tracking.

Helmet Detection System | *YOLOv8, PyTorch, OpenCV*

Sep. 2025

- Trained a deep learning model for detecting helmets on workers at construction sites for safety monitoring.

3D Face Morphing and Avatar Generation | *Python, Blender, OpenCV, MediaPipe*

Aug. 2025

- Mapped 2D facial expressions to 3D meshes to generate realistic avatars, combining computer vision and 3D animation techniques.

ThinkBoard Web App | *MERN Stack (MongoDB, Express, React, Node.js)*

June. 2025

- Created a web platform where users can write, edit, and manage their ideas and daily thoughts, similar to a smart to-do system.

Teaching Platform (Full Stack) | *ASP.NET, SQL*

Dec. 2024

- Developed a complete teaching management system with database design, backend APIs, and interactive web pages for teachers and students.

Computer Vision Small Projects | *Python, PyTorch, OpenCV*

Sep. 2022 – 2025

- Worked on **image segmentation, instance segmentation, image captioning, image generation and enhancement, monocular depth estimation and color grading, background remover, and 3D avatar generation**.

TECHNICAL SKILLS

Languages: Python, C/C++, C#, SQL, MongoDB, JavaScript, HTML/CSS, VB.NET, Kotlin

Frameworks: ASP.NET, React.js, React Native, Node.js, Express.js, FastAPI, React-Native Vision Camera

Developer Tools: Git, GitHub, Jupyter Notebook, Google Cloud Platform, Kaggle, VS Code, Visual Studio, PyCharm, Eclipse, Code::Blocks

Libraries and AI Tools: pandas, NumPy, Matplotlib, scikit-learn, PyTorch, TensorFlow, OpenCV, MediaPipe

Skills: REST APIs, App Development, Web Development, Database Design (ER Modeling), Object-Oriented

Programming, Data Structures, Operating System, Database Creation, Team Collaboration, 3D Modeling and Animation