Zarrar Abbas

XR Engineer · Immersive Simulation for Engineering & Computing Education

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XR engineer who builds immersive VR laboratories in Vizard 8 and SightLab VR Pro for civil engineering, mechanical engineering and computer science education, with eye tracking to measure how students learn. Seeking a funded MS / research assistant position in immersive learning, human factors or VR for engineering.

RESEARCH INTERESTS

Immersive VR for engineering and construction education · Eye tracking and behavioural measures of learning · Safety and hazard-recognition training · Projection (CAVE) and multi-user VR · AI-assisted VR content creation

EDUCATION

BS Computer Science — Dawood University of Engineering & Technology, Pakistan 2022 – 2026

- CGPA 3.65 / 4.00 · Merit Scholarship
- Thesis: *Augmented and Virtual Reality-Based Interactive Learning System for Computer Science Concepts* — supervised by Dr. Syed Ali Asgher; 2nd position, FICS Project Exhibition

EXPERIENCE

XR Engineer & Campaign Lead — Associated Instrument Distributors (AIDL), Pakistan 2026 – Present
Pakistan distributor of WorldViz VR systems (Vizard, SightLab, PRISM)

- Develop real-time Vizard 8 / Python VR labs for engineering education: RC construction site, bridges, seismic shake table, hydraulics & dam safety, IC engine.
- Support the WorldViz installation at DUET: two-wall projection VR with two Meta Quest Pro tracked stations.
- Built *vizard-mcp*, an MCP server that lets AI assistants generate and edit Vizard 8 scenes.
- Lead technical briefings on immersive labs for universities and medical colleges across Pakistan.
- Producing a 100-lesson English video course on Vizard 8 for students and faculty.

3D Artist — Fab (Epic Games), CGTrader 2026 – Present

- Design and sell game-ready Blender models (PBR materials, LODs, animations) of lab equipment, vehicles and machinery.

Cybersecurity Analyst — Cybarrier Solutions Pvt Ltd, Pakistan Dec 2024 – Jun 2025

- Vulnerability monitoring, threat analysis and security reporting.

Technical / IT Intern — IT Centre, Pakistan Aeronautical Complex, Kamra Feb 2023 – Jul 2024

- IT support, systems administration and technical documentation.

PROJECTS

A&VR Interactive Learning System — Final Year Project 2025 – 2026

- 12 VR modules (Vizard 8, Meta Quest Pro) turning abstract CS topics into explorable 3D scenes: RISC pipeline, SQL query optimizer, CPU scheduling, neural networks, PN junctions.
- Integrated SightLab VR Pro to log gaze fixations, dwell time, saccades and 6-DoF controller paths per module for learning analysis.
- "Sage", a voice-activated AI tutor (Gemini API, speech recognition, TTS, lip-sync) inside the modules.
- Presented at the 41st All Pakistan IEEEP Students Seminar (Feb 2026).

Engineering VR Lab Series 2026
RC SiteLab, BridgeLab VR, Seismic Shake Table, Hydraulics & Dam Safety, Engine Lab VR — physics-driven simulations built on a self-made Blender model library.

Other
Fire-extinguisher VR safety training · Mazar-e-Quaid digital twin · Face-recognition attendance system (OpenCV)

SKILLS

XR / Simulation	Vizard 8, SightLab VR Pro (eye tracking), WorldViz PRISM / projection VR, Meta Quest Pro, Unity (C#, OpenXR)
3D	Blender, photogrammetry, 3D scanning, Gaussian splatting
Programming	Python, C#, Java, JavaScript, SQL
Data / ML	Pandas, NumPy, Scikit-learn, OpenCV, Matplotlib

CERTIFICATIONS

Unity Game Development Certification — CEGA (Centre of Excellence in Gaming & Animation), NED University of Engineering & Technology, Pakistan

AWARDS

2nd Position, FYP Exhibition, FICS, DUET (2026) · Merit Scholarship, DUET · District-level marathon runner and cricketer

REFERENCES

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