

## Research Experience

### PhD Research, CVSSP, University of Surrey

Sep 2023- Present

Focusing on controllable synthesis of digital human avatars for the creative industries with work situated at the intersection of computer vision, graphics and machine learning.

## Publications

[Best Full Paper Runner-up] Umar Farooq, Jean-Yves Guillemaut, Graham Thomas, Adrian Hilton, and Marco Volino. 2025. Optimized 3D Gaussian Splatting using Coarse-to-Fine Image Frequency Modulation. In Proceedings of the 22nd ACM SIGGRAPH European Conference on Visual Media Production (CVMP '25)

### Research Engineer (Technical Project Co-ordinator)

StoryFutures, Royal Holloway, University of London

Mar 2023- Jun 2023;  
Nov 2023- Mar 2024

Designed and developed a high-performance backend for detecting visual accessibility issues in AR/VR mobile apps using PyTorch and OpenCV with an emphasis on high throughput frame analysis.

### Markerless Human Motion Capture,

MSc Thesis Project [Completed with Distinction]

Feb 2022- Sep 2022  
University of Surrey

Worked on bias in weakly supervised methods for markerless unsupervised human motion capture with severe motion blur, occlusion and pose ambiguity in 2D monocular sports videos. The work produced insights into pose estimation bias and sample efficiency in challenging domains.

## Education

### PhD Computer Vision, Graphics and Machine Learning,

University of Surrey, Guildford, UK.

Sep 2023- Present

### M.Sc. Computer Vision, Robotics and Machine Learning,

University of Surrey, Guildford, UK.

Feb 2022- Feb 2023

### B.Sc. Computer and Information Sciences, (CGPA 3.59/4.00)

[Best Undergraduate Thesis Award, 2021] [National Nomination for World Bank Innovator Seed Fund]  
Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad, Pakistan.

### High School Diploma, (GPA 3.90)

Roosevelt High School, Seattle, WA, USA.

Jun 2017

## Teaching Experience

### Lab Demonstrator, University of Surrey

Oct 2024- Jan 2026

AR, VR and the Metaverse (FHEQ Level 7 Module EEEM067), 2024; 2025-2026

- Assisted with practical lab sessions on Unity based VR application development for Oculus Meta Quest headsets.

Computer Vision and Graphics (FHEQ Level 5 Module EEE2041) 2025

- Assisted with practical sessions on developing graphics applications using OpenGL and C.