

Sahir Sharma

XR Researcher and Engineer

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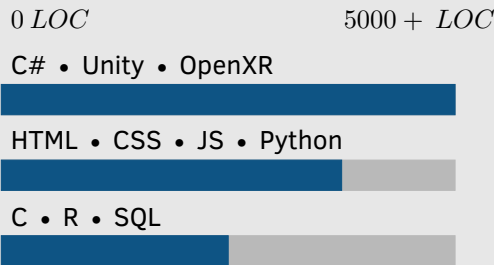
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Skills

Overview



Programming



Education

PhD, Extended Reality for Regulated Manufacturing
Industry co-funded with Boston Scientific
Thesis submitted 2026
TUS Midlands Midwest, Athlone
2022 - 2026 | Athlone, Ireland

MSc. Computer Science
Specialization: Data Science
Trinity College Dublin, University of Dublin
2018 - 2019 | Dublin, Ireland

B.Tech, Information Technology
Cumulative GPA: 8.36/10.00
Vellore Institute of Technology
2014 - 2018 | Vellore, India

Research Experience

- Oct 2022 - Present

Doctoral Researcher, XR for Smart Manufacturing TUS Athlone
Industry co-funded doctorate embedded with Boston Scientific in Ireland. Years 1 and 2 co-funded with the SFI Confirm Centre; years 3 and 4 with the Research Ireland ADAPT Centre. Supervised by Dr Niall Murray and Dr Conor Keighrey.
 - Delivered **4 no-code XR authoring templates** (SUVR, SUMR, Stylus XR, MUVR) to the partner, drawn from more than 12 builds forced by Unity, XRI and Meta SDK version churn.
 - Ran **3 studies with 75 industry practitioners across 2 manufacturing sites**, under research ethics approval and enterprise data policy.
 - Built the measurement apparatus: in-application telemetry at 100 ms, multi-angle and 360 session capture, step-wise task load and usability instruments, and a curated 3 TB qualitative dataset.
 - Delivered a state of the art review of 27 XR devices, a transfer thesis, and a commercial platform evaluation as partner deliverables.
 - Ran hands-on workshops for mechanical engineering teams and supported capability transfer to a second site that procured the infrastructure independently.
- Apr 2025 - Jul 2025

Research Assistant, TRANSMIXR Horizon Europe
Advanced a multi-user XR broadcast authoring platform towards demonstration readiness. Implemented virtual studio lighting control, virtual camera output into a live production switcher, and WebSocket control of audio, scene transitions and on-screen graphics. Resolved live video and audio synchronisation over NDI. Configured a CERTH volumetric capture rig for two simultaneous captures with audio into Unity and unit-tested the plugin integration.

Teaching Experience

- Jan 2021 - Jan 2022

University Teacher, Computer Science University of Limerick
Module leader with end to end responsibility from planning through delivery to grading: CS4337 Big Data and Security, CS4023 Operating Systems, CS4043 Games Modelling and Design, CS4815 Computer Graphics. Exchange lecturer, Shandong University of Technology, China.
- Nov 2019 - Jan 2021

Teaching Assistant (Full Time) University of Limerick
Developed content for 10+ Computer Science modules across tutorials, laboratories, grading and partial lectures, including CS4182 Foundations of Computer Science 2 and CS6502 Applied Big Data Visualization. Technical speaker at the 3D Printing Expo, National Manufacturing and Supply Chain Conference 2020.

Achievements

Publications

ACM IMX 2025, full paper, first author. Transforming Design Reviews with XR. [doi]

ACM MMSys 2025, industry demo, first author. No Code XR-CAx Experience Creation Workflows. [doi]

ACM IMX, co-author. From Parallel Screens to Shared Experiences, from TRANS-MIXR. [doi]

ACM CHI 2025 Workshop, accepted position paper. Bridging the Qualitas and Qualia of XR Experiences for Industrial Manufacturing.

Awards

ITAG Excellence Awards 2023: category win for the doctoral XR design review project, nominated by Boston Scientific Galway.

ACM IMX 2026: invited to the Early Career Track.

NASA Space Apps 2016: global nominee for an open source VR Mars simulator with custom haptics.

Google DevFest 2016: first prize for an AR newspaper application.

Marico Innovation Foundation: first prize for a non-invasive glucometer.

Others

Research Methods

Reflexive thematic analysis, Critical Incident Technique, Delphi, focus groups, SIM-TLX, SUS, BFI-2-S, ethics and GDPR

Technical

Unity, C#, OpenXR, XR Interaction Toolkit, Meta XR SDK, Netcode for GameObjects, MRTK, CAD to mesh translation, SolidWorks interop, 3DS Max, Blender, Python, R, SQL

Hardware

Meta Quest Pro, Quest 3 and 3S, HoloLens 2, XR stylus, 360 capture, wireless casting

Service

NASA Space Apps location lead: HackAthlone 2023, 2024, 2025; Limerick 2021; Vellore 2017. Reviewer, virtual reality research journal. TUS Engineering Expo 2024 and 2025, TUS Lego League, Code4Fun, Graphic Medicine Conference 2024.

Languages

English (IELTS: 7/9), Hindi (Native)

Doctoral Research

2022 - 2024	No-Code CAD to VR Design Review Workflow Boston Scientific Re-scoped the project from ergonomic testing to equipment design review after four months of on-site observation. Built a containerised Unity template with locomotion, teleport anchors, grab and poke interactions, constrained part motion and an in-headset tutorial, plus a versioned two-part instruction set. A 200 MB full facility assembly became walkable in 7.5 minutes ; decimation held quality at 1/100th of the source triangle count; experiences sustained 72 FPS through 30 minute stress tests.
2024	Three-Phase Study of VR Process Transformation Galway site Pre-exposure interviews, six instrumented in-situ VR design reviews and post-exposure interviews with the same people. 31 stakeholders recruited, 28 completed all phases. Four synchronised capture sources per session plus 100 ms headset, controller and hand telemetry. Reflexive thematic analysis. Published as a full paper at ACM IMX 2025.
2025 - 2026	Capstone: Supervised to Unsupervised Co-Creation Galway site Made the authoring workflow itself the object of study. Six role-based focus groups with 29 participants, then 27 individual authoring sessions (14 supervised, 13 unsupervised) with step-wise SIM-TLX and SUS. 33 sessions and roughly 3 TB captured across two DSLR angles and a 360 camera, with critical incidents coded from the 360 footage. Closed with a Delphi-inspired consensus round and BFI-2-S personality measures.
2026	Site-Neutral Replication Cork site Ported the four-phase protocol to a second plant with the use case deliberately unnamed. 15 recruited, 9 completed, of whom 3 were mechanical design engineers eligible for the authoring phases. Surfaced line and footprint layout planning as the second site's dominant demand, distinct from equipment design review at the first.
2023 - 2026	Mixed Reality at Full Scale, and Build vs Buy Both sites Passthrough MR template anchoring CAD in the real room, extended over three iterations with stylus drawing, markup and measurement. Carried a 160M+ triangle cleanroom layout in situ. Separately evaluated TheoremXR, Mersus Technologies and Holo-Light against the in-house route and wrote the internal build versus buy decision paper.

Dec 2015 - Jan 2018	Product Designer and Freelance Developer Lattice Innovations AR operating manual for an ICU patient monitor; enclosure design for a GSM patient monitor using CNC and laser cutting; packaging design for a portable health kiosk; front-end work on a clinician search application.
Jan 2015 - Apr 2017	Undergraduate Researcher and acting P.R.O. C.Labs Rapid prototyping across web, mobile, games, wearables and electronics. Led teams covering recruitment, logistics, inventory, marketing and finance, and organised two university hackathons.
May 2016 - Jun 2016	Summer Intern IGP.Com Front-end work on an inventory management system in Bangalore, alongside a parallel machine learning placement.

Earlier Experience