Shivi Vats, MSc

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WORK EXPERIENCE

Project Assistant, Scalable Platform for Innovations on Real-Time Immersive Telepresence (SPIRIT) Project
University of Klagenfurt, Austria
OCT 2022 - PRESENT

Development

- Developed a Unity/C# platform for point cloud testing using the HoloLens 2.
- Implemented dynamic resource management, HoloLens 2 shaders, and maintained a modular design to ensure ease-of-use by third-parties.
- Implemented a custom solution for eye-tracking calibration and data collection.
- Implemented a C#/MATLAB solution to generate visual saliency heatmaps.
- Conducted testing with 60+ participants, collecting 2000+ data points.
- Ported a Unity collaborative telepresence app from VR to AR for the Quest 3.
- Trained objective QoE models for point clouds using Python.
- Integrating systems for point cloud streaming using LLL-DASH with WebRTC-based systems from project partners

Communication and Organisation

- Organised and led regular internal meetings for over 2 years.
- Represented the University in meetings with European project partners.
- Collaborated with partners on five publications (and more ongoing work).
- Presented/demonstrated my work at four academic conferences and three public events, along with other internal demonstrations.
- Mentored an intern for 6 weeks, providing guidance and reviewing progress.
- Regularly contributed to project reports and deliverables.

Lecturer, Masters Game Studies and Engineering
University of Klagenfurt, Austria

OCT 2024- PRESENT

- Developed and taught a new course titled “Self-Guided Game Studies and Engineering” for the Masters Game Studies and Engineering curriculum.
- Mentored 17 students and guided them along their self-study journey through various topics related to game development.
- Will be teaching the courses “Non-Entertainment Games” and “Introduction to Computer Graphics” for the aforementioned curriculum from Oct 2025.
- Held a guest lecture for the “Representation and Configuration in Games: Perspectives” course on “Glitches: A Programmer’s Perspective”.

Project Assistant, 5G Playground “Virtual Realities”
University of Klagenfurt, Austria

OCT 2020 - SEP 2022

- Developed a Python web application using Flask, featuring a ported viewport prediction algorithm for on-demand 360° VR videos.
- Deployed the webapp at a 5G edge using NGINX.
- Implemented caching of predicted viewports using NGINX caching rules and Python requests, reducing server response time by up to 77%.
- Reduced motion-to-glass latency for on-demand streaming by up to 62% through significant modification of an existing Android DASH 360° video client.
- Collaborated with project partners throughout Austria and presented my work at project meetings and dissemination events.
- Regularly contributed to project reports and deliverables.

Tutor, Klagenfurt Coding Game Lab
University of Klagenfurt, Austria

OCT 2020 - JAN 2021

- Hosted bi-weekly Twitch streams for the Klagenfurt Coding Game Lab, teaching programming and game development concepts to Masters students.
- Developed a basic 2D platformer in Unity and C#, demonstrating core game development principles including physics, tilemaps, animations, and audio.

EDUCATION

MSc Game Studies and Engineering

University of Klagenfurt, Austria

OCT 2018 - APR 2022

Final Grade: 1.5 (1 is best, 5 is worst)

Thesis: Edge-supported Semantic-aware View Prediction for 360° Video Streaming

Topics

- Augmented Reality Game Development
- AI in Game Development
- Computer Graphics
- Non-entertainment Games
- Virtual Ethics
- Affect Theory in Games

BTech/BSc Computer Science and Engineering

Indian Institute of Information Technology (IIIT) Una, India

AUG 2014 - MAY 2018

Final Grade: 7.5 (10 is best, 4 is worst)

Topics

- Object-Oriented Programming
- Data Structures and Algorithms
- Software Design Patterns
- Operating Systems and Computer Organisation

PERSONAL SKILLS

Digital Skills (Self-assessment)

Levels: Basic User - Independent User - Proficient User

Proficient	Independent	Basic
Unity C# MRTK2 OpenXR	Python (Flask, NumPy, SciPy, Matplotlib) Unreal Engine with Blueprints and C++ Intel RealSense Cameras Git	Android (Java) Golang React, Tailwind CSS, and ShadCN Bash

Languages

Hindi (native); English (C2); German (B2).

Communication Skills

- Conducted countless presentations at internal meetings as well as academic and University events.
- Led and participated in regular internal and project-wide meetings, conveying project progress and challenges to partners.
- Held multiple workshops and tutoring sessions on game development with Unity, and taught and mentored Masters students as a lecturer.

Organisational/Managerial Skills

- Planned and led bi-weekly internal meetings for over two years.
- Mentored an intern for six weeks, providing guidance, delegating tasks, and monitoring progress.
- Planned and led collaborative research efforts with other research institutes, resulting in successfully published papers.
- Oversaw external projects as part of the SPIRIT open calls as a patron, guiding them in their work and ensuring alignment with SPIRIT project goals.

Research Skills

- Reviewed multiple papers for conferences such as ACM Multimedia.
- Can find, write, and understand research papers.

Certificates

- Completion of the “Deutsch als Fremd- und Zweitsprache” Level B2/b with an overall grade of “1”, where 1 is best and 5 is worst (2025).
- Successful completion of the “Proposal Writing Workshop” hosted by Kseniia Harshina and Mathias Lux at the University of Klagenfurt (2024).
- First Aid in Work Environments (2024).
- Drivers License Class B.

DISSEMINATION

Notable Projects

- Subjective Testing Platform: A modular mixed reality testing platform made for the HoloLens 2 using Unity and C#. The user-centric design allows researchers to import their own content to configure and run custom tests. The platform features eye-tracking, anchored UI, HoloLens-centric UX, point cloud playback, and other functionalities, and was published in 2023, with an updated version being published in 2025[1].
- One of my games, “Breakup Bonanza”, which focuses on toxic masculinity in relationships, was selected to be showcased at the Austrian Cultural Forum in Warsaw during the “Wrangling Genre Complexity” event in April 2024[2, 3].
- “Vis `A Vis”, a game using Unreal Engine where I was the lead developer, has over 3k views and almost 1k downloads, and was played by numerous YouTubers[4].
- My work with 5GPlayground Use Case “Virtual Realities” was nominated for the Futurezone Awards 2022 in the category “5G Innovation des Jahres”[5].

[1] github.com/shivivats/MR-Subjective-Testing-Platform
[2] https://austria.org.pl/events/wrangling-genre-complexity-with-polish-video-games-2
[3] https://tan-tan.itch.io/breakup-bonanza
[4] https://shivivats.github.io/projects/01-vis-a-vis
[5] https://futurezone.at/myfuzo/futurezone-award-2022-nominierte-preise-preisverleihung/402178929