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Shivi **Vats**

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Please note: I hold a *Red-White-Red Card Plus*, which gives me unlimited labor market access in Austria.

Work Experience

Project Assistant — **SPIRIT Project** — **OCT 2022 – Present**
Alpen-Adria Universität Klagenfurt, Austria
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 solution in C# and MATLAB to generate visual saliency heatmaps from user eye-tracking data.
- Ported a Unity collaborative telepresence app from VR to AR for the Meta Quest 3.
- Trained objective QoE models for point clouds using Python.
- Integrating LLL-DASH-based systems for point cloud streaming with WebRTC-based systems by facilitating communication between two foreign systems with minimal changes to the code.

Communication and Organisation

- Conducted subjective testing with 60+ participants, collecting 2000+ data points.
- Organised and led regular internal meetings for over 2 years.
- Represented the University in meetings with European project partners.
- Presented/demonstrated my work at four academic conferences and three public events.
- Mentored an intern for 6 weeks, providing guidance and reviewing progress.
- Regularly contributed to project reports and deliverables.

Lecturer — **Masters Game Studies and Engineering** — **OCT 2024 – PRESENT**
Alpen-Adria Universität Klagenfurt, Austria

- Developed and taught “Self-Guided Game Studies and Engineering” for the Masters curriculum.
- Mentored 17 students on their self-study journey through various topics related to game development and design.

Project Assistant — **5G Playground “Virtual Reality”** — **OCT 2020 – OCT 2022**
Alpen-Adria Universität Klagenfurt, Austria

- Developed a Python (Flask) web application, featuring a viewport prediction algorithm for on-demand 360° 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.
- Presented my work at project meetings and dissemination events and regularly contributed to project deliverables.

Tutor — **Klagenfurt Coding Game Lab** — **OCT 2020 – JAN 2021**
Alpen-Adria Universität Klagenfurt, Austria

- Hosted bi-weekly Twitch streams, teaching Unity and C# through a 2D platformer to Masters students.

Education

M.Sc. Game Studies and Engineering **Alpen-Adria Universität 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

B.Tech. Computer Science and Engineering **IIIT Una, India** **Aug 2018–May 2018**

- Final Grade: 7.56 (10 is best, 4 is worst)

Skills

Technical (Self-assessment)	Proficient: Unity, C#, MRTK2; Independent: Python, Unreal Engine with C++, Git, MATLAB, ML models; Basic: Android (Java), Golang, React, TailwindCSS with ShadCN, Bash; *Levels: Basic User - Independent User - Proficient User*
Communication and Organisation	Conducted countless presentations at internal meetings as well as academic and University events; Planned, 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; 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;
Languages	Hindi (Native), English (C1), German (B2)

Selected 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. GitHub.
Vis à Vis	3D first-person horror game developed using UE4 (C++ and BP). As the sole programmer, I designed and implemented the core gameplay systems, including the player controller, inventory management, dynamic trigger interactions, event sequences, and cutscenes. itch.io.

Interests

- I like to write about my experiences during game development and other personal projects and reflect on them in my portfolio. You can find them here: shivivats.github.io.
- I am very passionate about TTRPGs, especially D&D 5e. I have run numerous one-shots and a few short campaigns. I am currently running a homebrewed campaign for a party of 5.