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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	Held multiple workshops and tutoring sessions on game development with Unity, and taught and mentored Masters students as a lecturer; 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; Planned and led collaborative research efforts with other research institutes, resulting in successfully published papers;
Languages	Hindi (Native), English (C1), German (B2)

Selected Projects

Vis à Vis	3D first-person horror game developed using UE4 (C++ and BP) in a team of four. As the sole programmer, I designed and implemented the core gameplay systems, such as player controller, inventory management, dynamic trigger interactions, event sequences, and cutscenes. Find out more about it on itch.io or my portfolio.
Phantom Chess	A 2.5D auto-chess game made in Unity (C#) in a team of two. I implemented the combat, movement, and combination functionalities that were core to the game, among other features. Find out more about it on itch.io or my portfolio.
Watermelon Game	A 2D mobile game made using Godot alone as a way to learn the engine. The game is a clone of the "Suika game". I implemented the mechanics using physics, the UI, Find more about it on GitHub or my portfolio.

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.