

MSc SHIVI VATS

9020 Klagenfurt, Austria

☎ +43 660 6913302 ✉ shivivats7@gmail.com [in shivivats](https://www.linkedin.com/in/shivivats) [shivivats](https://github.com/shivivats) [shivivats-aa](https://github.com/shivivats-aa) shivivats.github.io

I am a MSc Game Studies and Engineering graduate and Extended Reality researcher, currently looking to apply my skills and experience in the games industry as a developer or designer. I hold a Red-White-Red Card Plus that allows me to work in Austria without a new permit.

Work Experiences

University of Klagenfurt

Oct 2022 – Present

Project Assistant, SPIRIT Project

Klagenfurt, Austria

- Developed a fully modular subjective testing platform for the HoloLens 2 using MRTK2 with Unity and C#;
- Implemented animated point clouds, eye tracking, UI and UX elements, and HoloLens 2 compatible shaders;
- Organized and conducted subjective testing with 60+ participants;
- Collaborated with project partners and external institutions from across Europe to produce 5 publications.

University of Klagenfurt

Oct 2020 – Oct 2022

Project Assistant, 5G Playground

Klagenfurt, Austria

- Worked on the “Virtual Realities” use case, alongside finishing my Masters;
- Developed a Python webapp using Flask and deployed it at a 5G edge using NGINX;
- Ported a viewport prediction algorithm for 360° videos from MATLAB to Python using NumPy and SciPy;
- Modified an Android DASH 360° video client to reduce motion-to-glass latency by up to 62%;
- Wrote my Masters thesis and published one paper on this work.

University of Klagenfurt

Oct 2020 – Jan 2021

Tutor, Klagenfurt Coding Game Lab

Klagenfurt, Austria

- Held bi-weekly Twitch streams as the host of the KCGL;
- Taught University students basics of programming and game development;
- Made a basic 2D platformer in Unity and C#, covering physics, tilemaps, animations, audio, and much more.

Education

University of Klagenfurt - MSc Game Studies and Engineering

Oct 2018 – Apr 2022

Knowledge Representation and Reasoning in Games, AR in Games, Computer Graphics *Klagenfurt, Austria*

- Final Grade: 1.5 out of 4
- Awarded full fee rebate for 4 semesters (maximum allowed) because of excellent grades

IIIT Una - BTech Computer Science and Engineering

Aug 2014 – May 2018

Data Structures, Object-Oriented Programming, Computer Networking

Una, India

- Final Grade: 7.5 out of 10

Skills

Technical

Experienced with Unity, C#, MRTK2; Knowledgeable in ARCore, Unreal Engine, C++, Python, and Android app dev. I am proficient with L^AT_EX and MS (and Open) Office tools.





Research

I am comfortable translating theoretical research into practical code and applications. I have extensive experience in academic reading, writing, and peer-reviewing. I have created Python webapps, modified Android apps, and written software in Unity for AR HMDs for various research tasks.

Languages







Hindi (native), English (C1), German (A2-B1).

Selected Projects




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.	
Car Parkour	3D multiplayer arcade-style racing game developed using Unity and C#. As part of a two-person team, I implemented the multiplayer functionality and some of the rocket-league style mechanics.	
SpellSlinger	Augmented reality tower defense game using Unity (C#) and Google ARCore. As the sole programmer on a 3-person team, I built the game's core mechanics, including object spawning triggered by real-world image tags, persistent object management, and the tower defense gameplay loop.	
Subjective Testing Platform	A modular mixed reality testing platform from scratch for HoloLens 2 using Unity and C#. The user-centric design allows researchers to import their own content and configure custom tests. The platform facilitated subjective testing with over 60 participants and served as the foundation for 5 publications.	

Dissemination and Outreach

Publications

- M. Nguyen, S. Vats, X. Zhou, I. Viola, P. Cesar, C. Timmerer, H. Hellwagner, “*ComPEQ-MR: Compressed Point Cloud Dataset with Eye Tracking and Quality Assessment in Mixed Reality*,” in ACM MMSys 2024; 
- M. Nguyen, S. Vats, H. Hellwagner, “*No-Reference Quality of Experience Model for Dynamic Point Clouds in Augmented Reality*,” in ACM MHV 2024; 
- M. Nguyen, S. Vats, S. Van Damme, J. Van der Hooft, M. Torres Vega, T. Wauters, F. De Turck, C. Timmerer, H. Hellwagner, “*Characterization of the Quality of Experience and Immersion of Point Cloud Video Sequences through a Subjective Study*,” in IEEE Access 2023 Volume 11; 
- S. Vats, M. Nguyen, S. Van Damme, J. van der Hooft, M. Torres Vega, T. Wauters, C. Timmerer, H. Hellwagner, “*A Platform for Subjective Quality Assessment in Mixed Reality Environments*,” in QoMEX 2023; 
- M. Nguyen, S. Vats, S. Van Damme, J. van der Hooft, M. Torres Vega, T. Wauters, C. Timmerer, H. Hellwagner, “*Impact of quality and distance on the perception of point clouds in mixed reality*,” in QoMEX 2023; 
- S. Vats, J. Park, K. Nahrstedt, M. Zink, R. Sitaraman, H. Hellwagner, “*Semantic-aware view prediction for 360-degree videos at the 5g edge*,” in IEEE ISM 2022.; 

Dissemination, Teaching, and Awards

- I taught a 2-hour long lecture to Masters students on 2D game development with Unity and C#;
- I gave a video podcast moderated by [Assoc. Prof. Dr. Mathias Lux](#) on “Unity vs Unreal Engine”, discussing the strengths and weaknesses of both engines; 
- I have given 10+ talks and demonstrations between conferences and project dissemination events.
- “Breakup Bonanza” was selected to be showcased at the Austrian Cultural Forum in Warsaw during the “Wrangling Genre Complexity” event in April 2024;
- “Vis À Vis” has over 3k views and almost 1k downloads, and was played by numerous YouTubers; 
- My work with 5GPlayground Use Case “Virtual Realities” was nominated for the Futurezone Awards 2022 in the category “5G Innovation des Jahres”. 

Hobbies

D&D	I am very passionate about TTRPGs, especially D&D 5e. I have DM'ed numerous one-shots and a few short campaigns, and I am currently running a homebrewed mixture of the Planescape and Eberron settings for a party of 5.
Blog	I like to write about my experiences during game development and reflect on them in my portfolio . I also write about hobby projects of mine on my blog . Please feel free to check it out, also for more information on the aforementioned D&D campaign.