Iman Jalilvand

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Professional Summary

Senior Unity Developer and Game-Dev Instructor with 6+ years of Unity & C# experience. Designed and delivered a hands-on Unity game-development curriculum (COSC 416), guiding 140+ students through end-to-end game projects published on GitHub. Built and optimized interactive XR applications (HoloLens 2, Meta Quest 2) for industrial training, leveraging strong profiling, UI/UX, and agile-team practices.

Core Competencies

- Unity & C#: Custom inspectors, ScriptableObjects, UI Toolkit, performance profiling (Unity Profiler, Memory Profiler)
- Game Systems: 2D/3D gameplay loops, input management, physics and animation integration
- UI/UX Development: Canvas-based HUDs, runtime layout, SUS-driven evaluations, A/B user testing
- XR Applications: AR Foundation, HoloLens 2 SDK integration, spatial mapping
- Collaboration & Leadership: Agile/Scrum sprints, cross-disciplinary teamwork, risk identification, peer code review
- Toolchain & Pipeline: Git/GitHub, Unity ML-Agents, Blender, SolidWorks

Professional Experience

Sessional Lecturer & Curriculum Designer, Game Development with Unity (COSC 416)

UBC Okanagan · Jan 2025 – May 2025

- Architected and taught a 3-credit Unity game-development course: designed lectures, labs, and assessments covering C#, gameplay architecture, and optimization.
- Defined a two-week Game Jam final project; students shipped demos to GitHub. (sample published project onitch.io)
- Established and maintained the course GitHub (GitHub) and YouTube tutorial channel (Recorded Sessions) to support asynchronous learning.
- Performed live profiling demos, diagnosing frame-rate and memory issues, and coached students on Unity Profiler best practices.

Graduate Research Assistant, Composite Research Network (CRN)

UBC Okanagan · Sep 2020 – Feb 2025

- Developed a mixed-reality thermoforming training tool in Unity & HoloLens 2, integrating real-time heat-transfer simulation and interactive UI widgets.
- Optimized complex scenes to sustain sub-16 ms frame times; leveraged Memory Profiler to reduce GC spikes by 30%.
- Led usability studies with industry engineers; distilled findings into UI/UX guidelines adopted in subsequent XR modules.
- Designed multi-agent DRL architectures, interfacing Unity ML-Agents with external Python trainers for process optimization.

Instructor, XR Development with Unity (Micro-Credential)

CITech, UBC · Aug 2024 – Sep 2024

- Created and delivered immersive modules on AR Foundation, spatial mapping, and UI Toolkit.

- Recorded all sessions and published them via the program portal, achieving a 4.8/5 satisfaction rating.

Founder & Lead XR Developer, InnoXR

BC · Sep 2024 – Present

- Built Unity-based AR/VR training applications for manufacturing clients.
- Coordinated feature scoping, technical risk assessments, and iterative sprint reviews with cross-functional teams.

Director of AI & XR Development, Advanced BioCarbon 3D (ABC3D)

Remote · Jan 2024 – Present

- Prototyped Unity XR demos showcasing AR-guided assembly workflows; collaborated with designers and QA to refine UI, increasing usability scores by 25%.
- Conducted performance profiling and debugging to ensure stable demos on target hardware.

Selected Project

- Blastronaut (Unity, C#): Space-shooter demo with homing and straight-fire missiles, UI lock-on indicator, and 3D audio; source at https://github.com/iman-jalilvand/Blastronaut.

Education

- PhD, Mechanical Engineering · University of British Columbia (UBC), Sep 2020 – Jan 2025 · Thesis: XR-Based Training & Adaptive ML Optimization for Thermoforming
- MSc, Mechatronics · Amirkabir University of Technology, Sep 2015 – Feb 2018
- BSc, Mechanical Engineering · Islamic Azad University, Sep 2011 – Aug 2015

Technical Skills

- **Languages**: C#, Python, MATLAB
- **XR & Game Engines**: Unity3D, AR Foundation, HoloLens 2 SDK, Unity ML-Agents
- **Modeling & Tools**: Blender, SolidWorks, Git/GitHub
- **UX Evaluation**: SUS, Likert surveys, user interviews
- **Methodologies**: Agile/Scrum, TDD, CI/CD pipelines

Publications & Awards

- **Jalilvand, I.**, Jang, J., Gopaluni, B., & Milani, A. S. VR/MR Systems Integrated with Heat Transfer Simulation for Training of Thermoforming: A Multicriteria Decision-Making User Study, *Journal of Manufacturing Systems*, 2024. https://doi.org/10.1016/j.jmsy.2023.11.007.

- **Jalilvand, I.**, Jiyoung, J., Hosseinionari, H., Seethaler, R., Gopaluni, B., Milani, A.S. (2023). An Interactive Digital Twin of a Composite Manufacturing Process for Training Operators via Immersive Technology. In: Stephanidis, C., Antona, M., Ntoa, S., Salvendy, G. (eds) HCI International 2023 Posters. HCII 2023. Communications in Computer and Information Science, vol 1836. Springer, Cham. https://doi.org/10.1007/978-3-031-36004-6_28.

- Silver Award, HCI International Student Design Competition (2023).