Payam Ranjbar
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Education

- **University of Calgary** — Calgary, AB
  Master of Science in Computer Engineering; — *Aug. 2022 – Dec. 2024*
- **University of Tehran** — Tehran, Iran
  Bachelor of Science in Computer Engineering; — *Aug. 2016 – July. 2020*

Experience

- **Schulich School of Engineering** — Calgary, AB
  HCI Researcher — *Sep 2022 - Present*
  - **Autobiography Gallery**: Designed, developed, and researched a memory-to-photo album gamified application for older adults. Utilized LLMs and prompt engineering in a Python server to transform memories into AI-generated photo albums, creating an engaging digital reminiscence therapy tool tailored for dementia care.
  - **MemoryLane VR**: Designed VR activities, like virtual gardening, to provide therapeutic and engaging experiences for individuals with dementia.
- **8th Art Studio** — Tehran, Iran
  Technical Game Designer — *Aug 2021 - Sep 2022*
  - **Game Design**: Designed game systems such as progression, rewards, and economy to ensure smooth gameplay. My work included writing Game Design Documents (GDD). Created a balanced boss behavior AI, and integrated narrative design into gameplay and cutscenes.
  - **Unity Programming**: Responsible for rapid prototyping of game features and integrating them into the production code. This included implementing gameplay mechanics such as player throwing and boss AI while ensuring compatibility with animation and engineering workflows.
  - **Interdisciplinary Commiunication**: Worked closely with animation, engineering, and art teams to maintain a cohesive and consistent game design. By bridging abstract concepts and practical implementation, I ensured alignment across departments and contributed to a unified final product.
- **Varknow Studio** — Tehran, Iran
  Game Developer — *Jul 2019 - Aug 2021*
  - **Unity Programming**: Developed an online strategy base-management mobile game, designing its system architecture and implementing core mechanics using Unity. This included programming essential systems such as camera controls, farming, and inventory mechanics. Additionally, I integrated REST APIs to sync player progression seamlessly with the game loop.
  - **VR Programming**: Led the development of a VR immersive English learning app, creating diverse interactions and scenarios for educational purposes. I designed and implemented a universal system to manage all VR scenes, ensuring consistency and efficiency across the app's various modules.

Projects

- **Autopilot Cars**: Open-source physics-based car AI system featuring waypoint navigation and obstacle avoidance. see full
- **TPS Shooting System**: Third-person melee and shooting system, weapon manager, enemy AI, and a reactive SFX/VFX system.see full
- **Traffic Sim VR**: VR simulation of a city intersection with realistic pedestrian and vehicle behaviors. see full
- **FPS Interaction System**: First-person interaction system, including NPC dialogue and an event manager.see full
- **Game Cinematics**: Demo of Cinematography and camera blocking techniques for creating game cutscenes. see full
- **Crew Master**: A hyper-casual mobile game focused on lighthearted heist gameplay, developed in Unity. see full

Programming Skills

- **Languages**: C#, Python, C++, Java
- **Technologies**: Unity, Unreal, OpenAI APIs, Photoshop