

Steven Vi

SOFTWARE DEVELOPER · XR ENTHUSIAST · HCI RESEARCHER

✉ stevenvi@outlook.com | 🏠 www.stevenvi.com | 📱 steven-vi

Experience

VizworX inc.

May 2020 - Present

SOFTWARE DEVELOPER · CALGARY, CANADA

- Part of the development team working on the "Protect Our Oceans" R&D project aimed at identifying and deterring IUU (Illegal, unreported and unregulated) fishing around the world. Sponsored by Canada's Digital Supercluster, in collaboration with McDonald, Dettwiler & Associates and Simon Fraser University, our contribution has been to provide advanced XR visualizations through the fusion of data and use of the 3D space to increase understanding of data and reduce cognitive load.
- Responsible for developing and designing XR applications that are deployed to the Microsoft HoloLens 2, HP Reverb G2, and OpenXR compatible devices.

Agile Surface Engineering Lab

May 2017 - April 2020

RESEARCHER & DEVELOPER · CALGARY, CANADA

- Team Lead / Scrum Master for a Research and Development project in collaboration with the *Alberta Electric System Operators (AESO)*.
- Implemented an Unity3D application using C# that explores how information from AESO's control room can be replicated and reimaged in a virtual environment.
- Facilitated consistent communication between the ASE Lab and AESO to gather requirements throughout the project.
- Led daily Scrum meetings and managed project goals on Trello.
- Built and deployed to the Microsoft HoloLens, Oculus Quest, HTC Vive, and HP Windows Mixed Reality Headset.
- Ran various demos showcasing ASE Lab projects to industry partners.
- Taught summer interns how to develop Unity3D applications and deploy to HTC Vive and Microsoft HoloLens.

RESEARCH ASSISTANT & DEVELOPER · CALGARY, CANADA

- Part of the R&D project in collaboration with *C4i Training and Technology* for creating an XR Environment for Emergency Response Management and *NiwViv: an immersive analytics authoring tool*.
- Implemented Unity3D applications, ASP.NET Webpage, and REST API using C#.
- Integrated real-time communication across multiple applications using ASP.Net signalR.
- Built and deployed to the Microsoft HoloLens, Oculus Rift, HTC Vive, and Apple Ipad.

University of Calgary

January 2018 - May 2019

TEACHING ASSISTANT FOR DATA 201 · CALGARY, CANADA

- Instructed tutorial sessions and assisted in the teaching efforts for *DATA 201 - Thinking with Data*.
- Taught students Microsoft Excel, OpenRefine, and Tableau for managing, visualizing, and making sense of data.

TEACHING ASSISTANT FOR CPSC 219 · CALGARY, CANADA

- Instructed tutorial sessions and assisted in the teaching efforts for *CPSC 219 - Introduction to Computer Science for Multidisciplinary Studies II*
- Taught object oriented analysis, design of small-scale computational systems, and Java programming

Instimax

January 2013 - February 2017

WEB DESIGNER · CALGARY, CANADA

- Designed and developed websites using Wordpress and premium themes.
- Facilitated communication with clients to gather requirements for their website.
- Integrated e-commerce onto websites for selling merchandise using Woo Commerce.
- Designed and created custom logos and graphics for websites.

Education

Master of Science in Computers Science

January 2018 - May 2020

UNIVERSITY OF CALGARY, CANADA

- Research Field: Human Computer Interaction (HCI)
- Thesis topic: User Experience Guidelines for Designing HMD Extended Reality Applications

Bachelor of Science in Computer Science

September 2013 - Dec 2017

UNIVERSITY OF CALGARY, CANADA

Technical Skills

Proficient with Unity3D, C#, Java, Python, Git, LaTeX, Agile Development, Adobe Photoshop and Premiere Pro

Familiar with Blender, HTML, JavaScript, CSS, SQL, Tableau

Notable Projects

AESO Immersive Control Room: An XR Application for Electricity Grid Management

May 2019 - December 2019

LEAD RESEARCHER & DEVELOPER · WWW.STEVENVI.COM/PORTFOLIO-ITEMS/AESO-IMMERSIVE-CONTROL-ROOM/

- In collaboration with AESO, built a prototype application that explores how the capabilities of XR can be utilized to create an accessible virtual environment for carrying out current control room tasks in remote locations.
- Worked with real electrical, market, and weather data from AESO's Control Room.
- Implemented an Unity3D application that was deployed to the Microsoft HoloLens, Oculus Quest, HTC Vive, and HP Windows Mixed Reality Headset.

Digital Car Mechanic: OBD-II x MQTT x HoloLens prototype

July 2020

HOLOLENS DEVELOPER · WWW.GITHUB.COM/MIXEDREALITYIOT/OBD-II_MQTT_HOLOLENS

- This prototype demonstrates a scaled-down version of the Digital Field Worker scenario; specifically, an automotive mechanic diagnosing vehicle issues using a HoloLens. Real time engine data from the OBD-II port is streamed to a HoloLens application using Azure Sphere over the MQTT protocol to an MQTT broker and displayed holographically while the mechanic views the engine. The mechanic can potentially clear the check engine light and perform other commands on the vehicle holographically.

NiwViw: Immersive Analytics Authoring Tool

September 2017 - September 2018

RESEARCH ASSISTANT & DEVELOPER · WWW.STEVENVI.COM/PORTFOLIO-ITEMS/NIWVIW/

- NiwViw is an augmented reality application that allows non-technical users to create their own immersive visualizations.
- Developed an Unity3D application that was deployed to the Microsoft HoloLens, and Apple Ipad.

Presentations

(Invited Talk) Virtualization of the AESO Control Room

June 2021

AESO CENTER OF EXCELLENCE FORUM · CALGARY, ALBERTA

- Overviewed the collaboration between AESO and the University of Calgary on creating an XR virtual control room, and discussed the benefits and challenges the team faced.

(Conference Presentation) User Experience Guidelines for Designing HMD Extended Reality Applications

September 2019

INTERACT 2019 · PAPHOS, CYPRUS

- Overviewed the content and results of our research paper.

(Demo) NiwViw: Immersive Analytics Authoring Tool

November 2018

INTERACTIVE SURFACE AND SPACES (ISS) 2018 · TOKYO, JAPAN

- Introduced and demoed the project NiwViw on the Microsoft HoloLens and Apple Ipad.

April 2018

UNIVERSITY OF CALGARY CPSC SHOWCASE 2018 · CALGARY, CANADA

Publications

INTERACT 2019

- **Steven Vi**, Tiago Silvia Da Silvia, and Frank Maurer: User Experience Guidelines for Designing HMD Extended Reality Applications in: the proceedings of Human-Computer Interaction – INTERACT 2019 17th IFIP TC 13 International Conference (INTERACT 2019), Paphos, Cyprus.

INTERACTIVE SURFACE AND SPACES (ISS) 2018

- Dianna Yim, Alec McAllister, Caelum Sloan, Rachel Lee, **Steven Vi**, Teresa Van, Wesley Willett and Frank Maurer. NiwViw: Immersive Analytics Authoring Tool (Demo), in: Proceedings of the 2018 ACM International Conference on Interactive Surfaces and Spaces (ISS 2018) 425-428, Tokyo, Japan, 2018.

Honors & Awards

- 2019 **Department of Computer Science Research Award**, University of Calgary
- 2019 **U of C Graduate Award Competition**, University of Calgary
- 2019 **Alberta Graduate Excellence Scholarship**, Alberta Scholarships
- 2017 **University of Calgary Faculty of Science Dean's List**, University Of Calgary
- 2017 **University of Calgary Undergraduate Merit Award**, University Of Calgary
- 2016 **Jason Lang Scholarship**, Alberta Scholarships
- 2015 **Jason Lang Scholarship**, Alberta Scholarships
- 2014 **Jason Lang Scholarship**, Alberta Scholarships