

Jeffrey Jacobson, Ph.D.

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XR Consultant

SUMMARY OF QUALIFICATIONS

- Deep and cutting-edge experience developing and applying XR technologies (VR, AR, MR, etc.)
- Extraordinary skill in communicating technical information to any audience
- Deep knowledge of the research literature on VR and its applications
- Outstanding ability to elicit and match client needs to innovative existing technologies
- User experience (UX) design skills for creating and building solutions as needed
- Project management experience and skills
- Published work on Educational VR cited over 1000 times in the academic literature
- Widely known as an XR champion, pioneer and promoter
- Technical: C++, Unix, Unity3D, Hololens, HTC Vive, Oculus Rift, WorldViz

EMPLOYMENT

CEO, EnterpriseVR (aka ConstructionVR), Boston, MA

2014 – Present

- Founded this consulting organization to develop awareness of XR technology in the construction industries. Lately working in other sectors, especially education, transportation, and medicine.
- Introduced architecture firms Shepley Bulfinch, Payette, and DRA to VR tools and their use.
- Developed and delivered VR training workshops for local architectural firms.
- Led 12 companies in VR/AR demonstrations at ABX, the Boston building trade show, 2016 and 2017.
- Made presentations to Autodesk User Group (August), the Building Information Management (BIM) Council, and the Boston Society of Architects (BIM and Construction Management groups).
- Built a VR simulation of a lab design with interactive material selection for Consigli Construction.
- Configured two CAVE-like VR systems for Scalable Display Technologies.
- Build a high-end VR visualization of a Manhattan luxury residence for Lanson Properties.
- Created an advanced VR Lighting Simulation for Ver-Tex Shading Solutions.
- Co-organized a workshop on VR/AR in Education at Harvard University Graduate School of Education.

Sample Projects

Scientific Advising for Luminopia, a startup launched by Harvard Innovation Labs (2017)

Luminopia is having a lot of success with their flagship product, a cure for Amblyopia (lazy eye) condition. but they need a second product in their pipeline to guarantee a secure future. I collaborated in a literature review and research effort with their CEO and top administrator. The process identified several viable product concepts, which improves their options and reduces their risk.

Trained Visual Analytics Lab (MIT) in VR/AR Project Management (2017)

Introduced senior staff to the basics of VR/AR technology: approaches to decision-making on its relevant and effective uses, management of projects, optimization of existing AR/VR tools for their purposes. Used a programmer/artist team to demonstrate possible applications. Supported process of equipment selection. The outcome clarified direction and reduced risk. Lab construction is now underway.

Designed and Built a VR Simulation of a Server Room for Consigli Construction (2016-2017)

Using construction firm's CAD model and design, my programming skills, and my artist team, built a VR simulation of a server room to support decision-making with senior management of the client company. The outcome was twofold: the informed and newly confident client's decision to proceed with the project, and the time and money saved by uncovering design flaws usually found after construction begins.

Developed Workshops on VR/AR in AEC for Scalable Display Technologies (2015 – 2017)

Developed and delivered monthly workshops on VR and AR for the Architecture, Construction and Engineering (ACE) industry for Scalable Display Technologies, which needed an entrée into the AEC sector to market projection-based displays that use Scalable's software. The outcome was increased awareness of Scalable offerings, increased sales, and valuable feedback from the potential user community on its needs.

Director and Co-Organizer, BostonVR, Boston, MA (a 501c3 non-profit) 2015 – Present

- BostonVR is a 5000+ member group of VR explorers and enthusiasts, 5th largest in the world.
- Plan and organize events: engage speakers and demo providers.
- In this role of VR champion, present, serve on panels, and provide demonstrations at events, conferences, and university classes at organizations such as Boston CHI, Harvard, Northeastern University, University of Pittsburgh, and the Learning & the Brain Foundation.
- Mentored local hackathons: HoloLens, Reality Virtually MIT, MedStart.

Executive Director, PublicVR, Boston, MA (a 501c3 non-profit) 2008 – 2014

See <http://publicvr.org>.

- Conducted research in educational VR and MXR for the public domain.
- Attracted and mentored 19 students to academic internships; 100% subsequently published.
- Developed the **Egyptian Oracle Project**, a mixed reality performance with audience participation, funded by competitive grant from the National Endowment for the Humanities (NEH).
- Created the **Living Forest**, virtual field trip in a virtual forest using a digital dome theater. On contract for the Complex Systems Research Center, UNH, and funded by National Science Foundation (NSF).

**Research Lab Engineer, Medical Virtual Reality Center (MVRC) University of Pittsburgh
Medical Center, Pittsburgh, PA**

1998 – 2002

- Built the MVRC lab and a VR CAVE for research and treatment of balance disorders using VR.
- Created the software it runs on, trained staff in its use and how to build their own virtual worlds.
- The lab supports quality research and treatment to this day, using the same software and hardware.

**Technical Director, SIMLAB, Studio for Creative Inquiry (SFCI), Carnegie Mellon University,
Pittsburgh, PA**

1993 – 1995

- Managed artists, historians, and programmers for groundbreaking projects to reconstruct major archeological sites and envision future planetary exploration.
- Projects include: Virtual Pompeii (DeYoung Museum, San Francisco, CA), Virtual Egyptian Temple (Guggenheim Museum, New York, NY), Virtual Mars (Carnegie Science Center, Pittsburgh, PA).

Programmer, Secure Computing, Honeywell, Minneapolis, MN

1987 – 1991

- Helped write the core of an operating system for the NSA. *Confidential* level security clearance.

EDUCATION

- Ph.D. Information Science (2002 – 2008) – School of Library and Information Sciences, University of Pittsburgh, Pittsburgh, PA

Dissertation: An experiment using an artificially intelligent learning game that showed increased learning with VR. See <http://publicvr.org/publications/IJGCMS-PublicDraft.pdf>

CaveUT: Created and distributed CaveUT, an open source modification that harnesses the Unreal Engine for use in VR. See: http://publicvr.org/html/pro_caveut.html

- B.A. Computer Science (1986) – University of Texas at Austin, Austin, TX
- A.A. Economics (1986) – Austin Community College
- A.A. Physics (1986) – Austin Community College

RECENT PRESENTATIONS

- Spoke at “Emerging Educational Technologies,” a course at Harvard Graduate School of Ed., 2017.
- Served on panels "Real Estate" and "AEC Fireside Chat" at the NYVR Expo, October 2017.
- Served on a panel on VR/AR in Classrooms at the Merging Minds & Technology conference, Nov. 2017.
- Spoke on Immersive Media at the BostonCHI, November 2017 meeting.
- Spoke on Immersive Media in Construction at the BIM Council, November 2017 meeting.

SELECTED PUBLICATIONS

- Gillam, R., & Jacobson, J. (Eds.). (2015). The Egyptian Oracle Project: Ancient Ceremony in Augmented Reality. Bloomsbury Publishing. <https://www.bloomsbury.com/us/the-egyptian-oracle-project-9781474234153/>
- Jacobson, J. (2017). Authenticity in Immersive Design for Education, in Virtual, Augmented, and Mixed Realities in Education, eds. D. Liu, C. Dede, J. Richards. Springer. <http://publicvr.org/publications/JacobsonDraft2017.pdf>
- Schloss, A., Jacobson, J., and Handron, K. (2012). Active Learning in a Digital Dome with the Living Forest, Journal of Immersive Education, Institute of Immersive Ed., 1(1). <http://publicvr.org/publications/Schloss2012.pdf>

For the full list of publications, go to <http://publicvr.org/JacobsonPublications2018.htm>.