Dan **Andersen**

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Education

Purdue University   *West Lafayette, IN*

PhD Student, Computer Science; GPA: 3.73/4.0   *May 2014 - present (expected May 2020)*

Master of Science, Computer Science   *May 2014 - Dec 2016*

University of Utah   *Salt Lake City, UT*

Bachelor of Science, Computer Science   *Sep 2007 - May 2011*

Publications

Conference Publications and Presentations

- **Andersen D**, Villano P, Popescu V. "AR HMD Guidance for Controlled Hand-Held 3D Acquisition." Accepted to IEEE ISMAR 2019 and to appear in TVCG (in press).
- **Andersen D**, Popescu V. "HMD-Guided Image-Based Modeling and Rendering of Indoor Scenes." *EuroVR 2018* (full paper), London, UK, October 2018.
- **Andersen D**, Rojas-Muñoz E, Lin C, et al. "AR Guidance for Trauma Surgery in Austere Environments." *EuroVR 2018* (industrial track). London, UK, October 2018.
- **Andersen D**, Popescu V. "An AR-Guided System for Fast Image-Based Modeling of Indoor Scenes." *IEEE VR 2018* (poster), Reutlingen, Germany, March 2018.
- **Andersen D**, Lin C, Popescu V, et al. "Augmented Visual Instruction for Surgical Practice and Training." VAR4Good 2018 – Virtual and Augmented Reality for Good (workshop paper), Reutlingen, Germany, March 2018.
- **Andersen D**, Popescu V, Lin C, et al. "A Hand-Held, Self-Contained Simulated Transparent Display." In proceedings of *IEEE International Symposium on Mixed and Augmented Reality (ISMAR-Adjunct)* (2016): 96-101.
- **Andersen D**, Popescu V, Cabrera ME, et al. "Avoiding Focus Shifts in Surgical Telementoring Using an Augmented Reality Transparent Display." *Medicine Meets Virtual Reality 22: NextMed/MMVR22* 220 (2016): 9.

Journal Publications

- Rojas-Muñoz E, **Andersen D**, Cabrera ME, et al. "Augmented Reality as a Medium for Improved Telementoring." *Military Medicine* (in press).
- **Andersen D**, Cabrera ME, Rojas-Muñoz E, et al. "Augmented Reality Future Step Visualization for Robust Surgical Telementoring." *Simulation in Healthcare* (2018).
- Rojas-Muñoz E, Cabrera ME, **Andersen D**, et al. "Surgical Telementoring Without Encumbrance: A Comparative Study of See-through Augmented Reality-based Approaches." *Annals of Surgery* (2018).
- **Andersen D**, Popescu V, Cabrera ME, et al. "An Augmented Reality Based Approach for Surgical Telementoring in Austere Environments." *Military Medicine* 182 (2017).
- **Andersen D**, Popescu V, Cabrera ME, et al. "Medical Telementoring Using an Augmented Reality Transparent Display." *Surgery* 159.6 (2016): 1646-1653.
- **Andersen D**, Popescu V, Cabrera ME, et al. "Virtual Annotations of the Surgical Field Through an Augmented Reality Transparent Display." *The Visual Computer* (2015): 1-18.

Experience

Facebook (Oculus Research; Facebook Reality Labs)   *Redmond, WA; Pittsburgh, PA*

Research Intern   *May-Sep 2017; Jun-Nov 2018; May-Sep 2019*

- Investigating deep learning for view synthesis in the context of virtual tourism.
- Developed deep learning style transfer approach with real-time raytracing to render view-dependent effects of captured real-world environments for VR visualization.
- Researched and prototyped multi-user mixed-reality application to investigate social interaction with virtual content.

Purdue University   *West Lafayette, IN*

Graduate Research Assistant   *May 2014 - present*

- Developed and validated novel AR-HMD guidance for 3D scanning using online geometric quality heuristics.
- Developed AR interface for guided multi-panoramic acquisition of indoor scenes suitable for five-degree-of-freedom VR visualization.
- Developed prototype augmented reality surgical telementoring system, using Microsoft HoloLens, to provide live expert surgical guidance directly into mentee surgeon's field of view.
- Researched and developed prototype transparent display system for user-perspective rendering in augmented reality applications.

NVIDIA   *Santa Clara, CA*

Research Intern   *May 2016 - Aug 2016*

- Investigated and researched rendering improvements in gaze-tracking head-mounted virtual reality displays.
- Developed simulator application using Python and OpenGL shaders to implement and validate gaze-enhanced rendering techniques.