BROOKE KRAJANCICH

EE PhD @ Stanford, creating more perceptually realistic AR/VR displays

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EXPERTISE

- Intimate knowledge of the graphics pipeline and stereo-rendering in the context of AR/VR displays
- Years of experience working with VR displays and eye-trackers, including off-the-shelf and custom-built prototypes
- Deep familiarity with vision science literature and experience with modelling display signals to which the visual system is sensitive, and those that are not
- Experience leading human factors research, including designing, implementing and executing user studies for evaluating visual comfort and quality of near-eye optics

EDUCATION

PhD. in Electrical Engineering

Stanford University

📅 Sep 2018 - Jun 2023 (estimated)   📍 Palo Alto, USA

Computational Imaging Group, supervised by Prof. Gordon Wetzstein (EE/CS) Thesis: "Understanding the Human Visual System for more Perceptual Realistic Virtual and Augmented Reality Displays"

M.S. in Electrical Engineering

Stanford University

📅 Sep 2018 - Dec 2020   📍 Palo Alto, USA

GPA 3.77/4. Courses in: C/C+, machine learning, computer vision, human perception, graphics, computational imaging & displays, AR/VR.

B.Phil.(hons) in Electrical Engineering & Mathematics

The University of Western Australia

📅 Feb 2014 - Nov 2017   📍 Perth, Australia

Thesis: "Handheld Optical Imaging Probes for use in Breast Surgery" GPA 6.95/7, First Class Honours. Semester abroad at University College London.

RECENT PUBLICATIONS

L. Hsiao, **B. Krajancich**, P. Levis, G. Wetzstein, and K. Winstein. 2022. "Towards retina-quality VR video streaming: 15ms could save you 80% of your bandwidth", in SIGCOMM Comput. Commun. Rev. 52, 1 (2022).

B. Krajancich, P. Kellnhofer, G. Wetzstein. "A Perceptual Model for Eccentricity-dependent Spatio-temporal Flicker Fusion and its Applications to Foveated Graphics", in ACM Trans. Graph., 40 (4), 2021.

B. Krajancich, P. Kellnhofer, G. Wetzstein. "Optimizing Depth Perception in Virtual and Augmented Reality through Gaze-contingent Stereo Rendering", in ACM Trans. Graph., 39 (6), 2020.

B. Krajancich, N. Padmanaban, G. Wetzstein. "Factored Occlusion: Single Spatial Light Modulator Occlusion-capable Optical See-through Augmented Reality Display", in IEEE Transactions on Visualization and Computer Graphics, 2019.

S. Perkins*, **B. Krajancich***, C. Yang, B. Hargreaves, B. Daniel, M. Berry. "A Patient-Specific Mixed-Reality Visualization Tool for Thoracic Surgical Planning", in Anals of Thoracic Surgey, 2020.

*see website or google scholar for full list

PATENTS

📕 **Method of Volumetric Imaging of a Sample**
US WO2019071295A1 · Issued Sep 1, 2018

WORK EXPERIENCE

Co-founder & CTO

tbh

📅 Aug 2020 - Aug 2022

Startup founded during the pandemic to reinvent mental healthcare for students.

- Raised $3.5M in VC captial
- Lead the development team for marketing website and B2C web application
- Executed on product and design, including setting OKRs and KPIs
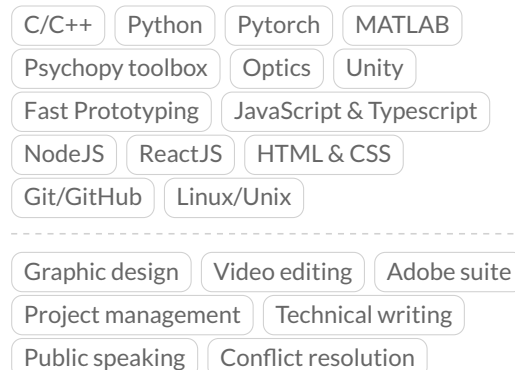
Teaching Assistant

Stanford University

📅 Sep 2019 - current

Courses taught:

- RAD206 Mixed-Reality in Medicine
- EE267 Virtual Reality

SKILLS

`C/C++` `Python` `Pytorch` `MATLAB` `Psychopy toolbox` `Optics` `Unity` `Fast Prototyping` `JavaScript & Typescript` `NodeJS` `ReactJS` `HTML & CSS` `Git/GitHub` `Linux/Unix`

`Graphic design` `Video editing` `Adobe suite` `Project management` `Technical writing` `Public speaking` `Conflict resolution`

LEADERSHIP

- Stanford Summer Engineering Academy Program Coordinator (2019)
- IEEE Stanford Board Member (2019-2020)
- Stanford Knight-Hennessy Scholars Women in Science Group Chair (2018-2019)

INVITED TALKS & PRESENTATIONS

- Stanford eWear monthly seminar (2021)
- Stanford Medical Mixed Reality Annual Symposium (2020)
- Society for Thoracic Surgeons TechCon (2019)

AWARDS

🎓 **2018 Stanford Knight-Hennessy Fellow**
in recognition of global, cross-disciplinary leadership potential

G **2016 Google Techmakers Scholar**
in recognition of academic excellence and service to promoting women in technology