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Chair of Integrated Product Design (IPD)

Call for Master Thesis at the Chair of Integrated Product Design (IPD)

REIMAGINING WORKSPACES FOR VR/AR

Designing for a New Era of Immersive Work

Summary

How can we design physical workspaces that support the needs of Virtual and Augmented Reality professionals? Virtual Reality (VR) and Augmented Reality (AR) are revolutionizing how we interact with workspaces, breaking the limitations of traditional office setups. Immersive work involves movement, interaction, and extended periods of wearing headsets - factors that demand a new approach to workspace design. This thesis explores how physical workspace design can evolve to better support professionals who work in immersive settings. The goal is to create a real-world (1:1) workspace prototype and initial design principles that respond to the unique spatial, ergonomic, and technological needs of VR/AR workflows. You will begin with a short literature review on using immersive technologies in professional contexts, physical workspace design, and ergonomics. Then, through interviews with experienced VR/AR users (e.g., designers, developers, researchers), you will identify practical challenges and needs related to immersive work. Based on these insights, you will design and build a full-scale prototype of a workspace optimized for VR/AR use. To complete your study, a small group of pilot users will test the space, offering usability, comfort, and effectiveness feedback. This feedback will help validate your concept and contribute to design recommendations for future immersive work environments.

Keywords: AR/VR, Workspace Design, Prototype

Prerequisites

In order to conduct this thesis at our chair, you need to bring an interest and the relevant skills in hands-on interior design, visualization and modelmaking skills, a solid understanding of scientific design research (if needed, this can be acquired through participation in the IPD Research Seminar, which is mandatory for Architecture students), and some first experiences with or willingness to learn how to use VR/AR glasses supporting your room design development. For this topic, we consider students from the following programs: Architecture and Human Factors Engineering (students from other programs upon request).

Provided Resources

We will provide you with access to our **creative space lab** for experimentation and building a real-size intervention and to our AR/VR glasses. A small budget will be allocated to realizing the design intervention. The actual thesis will be rather self-directed. We offer 3 personal meetings throughout the thesis progress in a joint colloquium with other thesis candidates, plus on-demand consultations when needed.

How to Apply

If you are interested in conducting this thesis at our chair, please send an email to **thesis.ipd@ed.tum.de** with reference line **"Master Thesis: Reimagining workspaces for VR/AR".** Please state in your email your preferred starting date, your motivation for the topic, and attach your resume and some portfolio samples. Based on the provided materials we will invite you for a first meeting to discuss further.

Key References

Aufegger, L., Elliott-Deflo, N., & Nichols, T. (2022). Workspace and Productivity: Guidelines for Virtual Reality Workplace Design and Optimization. *Applied Sciences*, *12*(15), 7393. https://doi.org/10.3390/app12157393

De Bruyne, E., & Gerritse, D. (2018). Exploring the future workplace: Results of the futures forum study. *Journal of Corporate Real Estate*, *20*(3), 196–213. https://doi.org/10.1108/JCRE-09-2017-0030