

Assembly Training: An Augmented Reality Approach Using Design Science Research

Authors : Stefan Werrlich, Phuc-Anh Nguyen, Kai Nitsche, Gunther Notni

Abstract : Augmented Reality (AR) is a strong growing research topic. This innovative technology is interesting for several training domains like education, medicine, military, sports and industrial use cases like assembly and maintenance tasks. AR can help to improve the efficiency, quality and transfer of training tasks. Due to these reasons, AR becomes more interesting for big companies and researchers because the industrial domain is still an unexplored field. This paper presents the research proposal of a PhD thesis which is done in cooperation with the BMW Group, aiming to explore head-mounted display (HMD) based training in industrial environments. We give a short introduction, describing the motivation, the underlying problems as well as the five formulated research questions we want to clarify along this thesis. We give a brief overview of the current assembly training in industrial environments and present some AR-based training approaches, including their research deficits. We use the Design Science Research (DSR) framework for this thesis and describe how we want to realize the seven guidelines, mandatory from the DSR. Furthermore, we describe each methodology which we use within that framework and present our approach in a comprehensive figure, representing the entire thesis.

Keywords : assembly, augmented reality, research proposal, training

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