

Mass Virtual Shoe Try-On based on Cloud Technologies

The recent progress of depth sensing devices enables innovation in interactive technologies with real-time human feedback. In the previous study, we have developed a virtual shoe try-on function in augmented reality that proves the idea of personalized design. This research attempts to re-invent this function based on cloud computing technologies. The goal is to realize virtual try-on in a large scale and thus enhance its practical values. The new function employs a portable RGB-D sensor that can capture human foot motion almost everywhere, without the need of personal computer as in traditional RGB-D cameras. The captured data will be uploaded to a cloud platform via wireless transfer supported by advanced video streaming. The cloud platform provides data management interfaces and massive computing capabilities accelerated by GPU (Graphical Processing Units) as well as facilitated by middleware technology. An image processing module will recognize human foot in the video stream and identify its position in 3D space. A shoe model will be precisely positioned on the recognized foot. Corresponding software modules that provide the computations required in the virtual try-on process will be developed and deployed in the cloud. The final try-on result will be distributed through networks for peer evaluation, thus allowing crowd co-creation. In conclusion, this research implements the concept of mass design personalization using cloud technologies. The implementation opens up a new design service of wearable products. Cloud computing will thus find new applications in product design and development. The collaborating company will strengthen their core technologies and product values by conducting this project.

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