Human-centered Computational Design driven by Perceptual Data and Creative AI

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1/30/2018 at 10:30 am
CoRE 301

Abstract

The increasing abundance of empirical data captured from the real world and perceptual data captured from virtual reality lets us devise novel approaches for data-driven computational design. In this talk, I will discuss the recent progress of my team in devising computational design approaches for automatically generating human-centered designs, including interior design, architectural layout design, zoomorphic furniture design, fashion design and the design of reconfigurable objects and dissection puzzles. I will also talk about how human perceptual data tracked from virtual reality can be employed for creating novel applications such as personalized exergaming and training. Finally, I will share insights from the graphics, vision and robotics perspectives on enhancing computers as creativity support tools, and on the possible future roles of humans and AI in design.

Bio

Craig Yu is an assistant professor at the University of Massachusetts Boston. His research interests are in computer graphics, vision and virtual reality. He obtained his PhD degree in Computer Science from UCLA in 2013, where he received the Outstanding Recognition in Research. He is a recipient of the Cisco Outstanding Graduate Research Award, the Award of Excellence from Microsoft Research and the UCLA Dissertation Year Fellowship. His research has been published in top graphics and vision venues, including SIGGRAPH, SIGGRAPH Asia, ICCV and CVPR; was awarded the Best Paper Honorable Mention in 3DV 2016; and has been featured in New Scientist, the UCLA Headlines, the UCLA Mathematics Newsletter and newspapers internationally. His lab is supported by the NSF.

Faculty Host: Mubbasir Kapadia