THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

Department of Computing
電子計算學系

RESEARCH SEMINAR

Assistive AR System in Bridging the Deaf and Hearing Divide

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The Chinese University of Hong Kong
Hong Kong

Date : 18 April 2024 (Thu)
Time : 3:00 pm - 4:00 pm
Venue : HJ305

Abstract

Communication barriers between deaf and hearing individuals have led to difficulties in various real-world scenarios, including emergencies, online meetings, and daily interactions. In this talk, I will discuss our novel approaches to mitigate these barriers using mobile and Augmented Reality (AR) systems, presenting cost-effective solutions for accessible communication. We first focus on urgent situations like emergency communication. Our approach uses sign language models with three parts: 1) Capture sign gestures using mobile-glass setup; 2) Recognize signs with models from the sign language domain; 3) Provide bidirectional translation based on ASL grammar and syntax. Collaborative efforts with ASL users and organizations have yielded promising results. Our domain-oriented models for emergency communications reduce response times with accurate translations. Their versatility applies to various settings like face-to-face interactions, digital content, and sign language education. Our research advances accessible communication solutions and promotes social inclusion.

About the Speaker

Dr GUO Yunqi is a postdoctoral fellow at The Chinese University of Hong Kong (CUHK), where he works with Prof. Guoliang XING in the innovative CUHK AIoT Lab. His research is centered on augmented reality (AR)/mobile systems and visual language interaction, with a primary focus on creating assistive AR technologies for everyday use. He obtained his Ph.D. in Computer Science from the University of California, Los Angeles (UCLA), where he was mentored by Prof. Songwu LU. He also holds an M.S. degree from UCLA, which he received in 2018. Before his time at UCLA, Yunqi earned a B.S. from Shanghai Jiao Tong University (SJTU) in 2016, where he was under the guidance of Prof. Xinbing WANG.

Apart from his academic and research pursuits, Dr GUO is passionately involved in exploring the intersection of technology and accessibility. During his Ph.D. years, he founded the AnySign team, an interdisciplinary group committed to bridging communication gaps between the deaf and hearing. He was a member of the UCLA Sign Language Club and has traveled to visit over ten organizations and groups dedicated to enhancing societal accessibility.

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