香港城市大學
City University of Hong Kong

TELEPATHIC CONSTRUCTION: teaching empathic design and fabrication across remote distances

Project Number: 6000771

Principal Investigator: Dr. Ray LC

Grant Type: TSG

Abstract:

Telepathic Construction is a remote distance learning environment for engaging students from City University of Hong Kong School of Creative Media with state-of-the-art design and fabrication education from the world-renowned Parsons School of Design through an intimate online empathetic collaboration format with telepresence robotic arm. Telepathic Construction will be manifest as course SM3808 in Art and Science Studio at SCM and cross-listed with the Parsons Design and Technology curriculum, involving both Hong Kong and New York students in collaborative crafting for bodily spaces. The goal of this course is to subvert norms that govern bodies and imagine radical remote presence strategies that extend our bodies across time, space and culture using human-machine interaction. Run in collaboration with Parsons School of Design, students will collaborate in teams across the Pacific to research and investigate strategies for empathetic interaction, alternate sensory input/output pairings and conceptions of mutable time and space. In the process, students will engage in personal and collective meaning-making to enable them to better understand different customs and diversity of attitudes about the self.

Combining technical instruction with a body of theories from disability studies, post-humanism, fashion, sensory play, subversion and performance art, students will build wearables with Arduino and robotics APIs, and create virtual experiences in Unity. Technical workshops in the first half of the course will inform a series of ideas in form prototypes and a final case study that connects human-machine bodies from different sides of the Pacific. Crafting wearable tools, systems and experiences for meaningful bodily communication between two human bodies, between human and telepresence robotic arm, or a human and another living species, students will operate in physical and virtual contexts with equal facility to find strategies that enable empathetic, interactive experiences in both. This course is ideal for storytellers and creatives who want to break new ground through the physical and digital representation of culturally diverse bodily narratives. Final projects will be presented in a public virtual exhibition accompanied by completion of publication-worthy artifacts.

By the end of this course, students will:

1. Become familiar with technologies for empathic design for populations with different attitudes, value systems, social norms, and political situations;

2. Acquired Arduino and telepresence robotics API-based physical computing;

香港城市大學
City University of Hong Kong

3. Acquired physical fabrication skills specific to wearables;

4. Acquired digital design skills specific to wearables and wearable based digital experiences (using Unity and Cinema 4D);

5. Become familiar with python robotics programming and acquired experience designing for remote live audiences.

The demonstrable artifacts from this project include:

1. A webpage detailing the projects completed by interdisciplinary teams that match students from New York (Parsons) and Hong Kong (SCM) as an online exhibition that will be publicized internationally via Parsons (The New School) and other platforms.

2. Publication worthy work from select projects, which will be submitted to the ACM 16th Conference on Tangible, Embedded, and Embodied Interaction, including pictorials, papers, posters, and performances.

3. An on-going catalogue of collaborative projects between Parsons and CityU that documents their telepathic design and fabrication process.

Academic Publication:

Ray, L., & Amgalan, B. (2021). Remote Bodies: Collaborative design and fabrication studio for bodily interactions across the day-night divide. Digitally Engaged Learning Conference. Hong Kong. https://www.digitallyengagedlearning.net/2021/session/34