Yiming Luo, Ph.D. Candidate

DoB: 23/11/1995
Gender: Male
Nationality: Chinese
(+86) 18737611666
yiming.luo19@student.xjtlu.edu.cn
Xuetang Street, Suzhou Industrial Park, Jiangsu Province, China
https://www.yimingluo.com/

Employment History

Sep/2019 – Present..
- **Research Assistant** X-CHI Lab (Leader: Prof. Hai-Ning Liang), Xi'an Jiao-tong Liverpool University, Suzhou, China.
- **Teaching Assistant** Department of Computer Science, Xi'an Jiao-tong Liverpool University, Suzhou, China.

Jul/2017 – Sep/2017
- **Intern** Department of Engine, SAIC Motor Corporation Limited, Shanghai, China.

Education

Sep/2019 – Present..
- **Ph.D., University of Liverpool** in Computer Science & Software Engineering.
  Thesis title: *Teleoperation of Mobile Unmanned Robots in Virtual Reality*
  Supervisor: Hai-Ning Liang, Professor, Xi'an Jiaotong-Liverpool University, Suzhou, China
  Second Supervisor: Shan Luo, Associate Professor, King's College London, London, UK

Sep/2017 – Sep/2018
- **M.Sc., University of Southampton** in Systems, Control & Signal Processing.
  Thesis title: *Sensors for measurement of object gripping.*

Sep/2015 – Jun/2017
- **B.Eng., University of Liverpool** in Electrical & Electronics Engineering.
  Thesis title: *Control of a wind turbine for supporting power grid frequency*

Sep/2013 – Jun/2015
- **Y1 - Y2, Xi'an Jiaotong Liverpool University** in Electrical & Electronics Engineering.

Project Work

Mar/2022 – Present..
- **Dynamic edges enhancement: A telepresence method based on two binocular depth cameras** (Team)
  Lead a team of postgraduates to enable dynamic edge enhancement of binocular images in UGV telepresence using depth information from two depth cameras.

Sep/2021 – Mar/2022
- **World-in-Miniature (WiM) technology in UGV teleoperation** (Team)
  Lead a team of Ph.D. to investigate a remote manipulation method based on the visualization of the miniature virtual world and the grasping interaction of the miniature virtual surrogate of UGV.

Mar/2021 – Sep/2021
- **Complementary colors edge enhancement: an edge enhancement-based teleoperation method** (Team)
  Lead a team of postgraduates to investigate an edge enhancement for telepresence based on the theory of highlighting related to complementary colors.

Project Work (continued)

Sep/2020 – Mar/2021 **AirNeck: a prototype for wind haptic feedback around human neck** (Team)
Lead a team of undergraduates to realize real-time wind haptic feedback on the human neck to simulate natural wind resistance during UGV teleoperation.

Mar/2020 – Sep/2020 **Stereoscopic film: a binocular camera-based telepresence method** (Team)
Lead a team of undergraduates to realize real-time image transmission using a binocular camera and provide a perspective similar to a stereoscopic movie in a VR environment for UGV telepresence.

Sep/2019 – Mar/2020 **Haptic on HMD: A distance perception method** (Individual)
Complete all software and hardware programming, constructions, and experimental site settings individually. Realize real-time distance perception using in-HMD vibro-tactile feedback during UGV teleoperation.

Mar/2018 – Sep/2018 **Sensors for measurement of object gripping** (Individual)
Investigate the data visualization of measurement of object gripping with inertial measurement units (IMUs).

Mar/2017 – Sep/2017 **Control of a wind turbine for supporting power grid frequency** (Individual)
Investigate the control of wind turbines to provide operations to achieve the maximum wind power extraction and provide constant power above the rated wind speed.

Sep/2015 – Sep/2016 **Autonomous on-water vehicle for searching and mapping** (Team)
Lead a team and be responsible for the assembly and programming of the hardware and the setup of the experimental site. Implement automatic drawing and visualization of real-time obstacle map.

Research Publications

Journal Articles

1. **Luo, Y.**, Wang, J., Shi, R., Liang, H.-N., & Luo, S. (2022). In-device feedback in immersive head-mounted displays for distance perception during teleoperation of unmanned ground vehicles. *IEEE Transactions on Haptics*, *15*(1), 79–84. doi:10.1109/TOH.2021.3138590

Conference Proceedings

1. Li, Z., **Luo, Y.**, Wang, J., Pan, Y., Yu, L., & Liang, H.-N. (2022). Collaborative remote control of unmanned ground vehicles in virtual reality. In *2022 2nd international conference on interactive media, smart systems and emerging technologies (imet)*.
2. **Luo, Y.**, Wang, J., Pan, Y., Luo, S., Irani, P., & Liang, H.-N. (2022). Teleoperation of a fast omnidirectional unmanned ground vehicle in the cyber-physical world via a vr interface. In *The 18th acm siggraph lnternational conference onvirtual-reality continuum and its applications in industry (vrcai 2022)*.
3. Liu, Y., Lin, Y., Shi, R., **Luo, Y.**, & Liang, H.-N. (2021). Relicvr: A virtual reality game for active exploration of archaeological relics. In *Extended abstracts of the 2021 annual symposium on computer-human interaction in play* (pp. 326–332). doi:10.1145/3450337.3483507
4. **Luo, Y.**, Wang, J., Liang, H.-N., Luo, S., & Lim, E. G. (2021). Monoscopic vs. stereoscopic views and display types in the teleoperation of unmanned ground vehicles for object avoidance. In *2021 30th ieee international conference on robot & human interactive communication (ro-man)* (pp. 418–425). doi:10.1109/RO-MAN50785.2021.9515455

In-Progress Papers

Under Review
- *Augmenting Performance of VR-mediated Teleoperation of Unmanned-Ground Vehicles Using Edge Detection*

Preparing
- *Supporting Awareness in the Virtual Environment: A Comprehensive Review Teleoperation of Mobile Unmanned Robots in Virtual Reality*
- *A Telepresence Method to Enhance Dynamic Edges Based on Binocular Depth Cameras*
- *Edge Enhancement for Improved Teleoperation of Unmanned Ground Vehicles Using Virtual Reality*

Skills

Coding
- C, C++, C#, Java, Python, R, HTML· · ·

Tools
- Unity3D, SPSS, MS, PS, LaTeX, Matlab, VICON· · ·.

Languages
- English (Fluent) reading, writing and speaking competencies, Chinese (Native).

Misc.
- Academic research, teaching, training, consultation, LaTeX typesetting and publishing; Working out, playing and developing games· · ·