Zuyuan Zhu

Contact Information

School of Computer Science, University of Lincoln
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Research Interests

Agri-robotics, robot learning from demonstration, robotic assembly, mobile robot, machine learning

Academic experience

University of Lincoln, Lincoln, UK

Post Doctoral Research Associate **Feb. 2021 - present**
Involved in the Robot Highways Project, working on Agri-robotics.

University of Essex, Colchester, UK

Graduate Laboratory Assistant **Oct. 2017 - present**
Assisting undergraduate students in the laboratory, undertaking marking of assignments and related administrative work.

- CE315: Mobile Robotics Spring 2019, Spring 2020
- CE243: C Programming and Embedded Systems Autumn 2018, Autumn 2019
- CE101: Team Project Challenge 2017 - 18, 2018 - 19, 2019 - 20

Research Assistant **Jun. 2019 - Mar. 2020**
Assisting the module supervisor in structuring mobile robot tutorials with ROS.

Open Day Demonstrator **Sep. 2018 - present**
Showing robot demos to get the school children interested in robotics and Essex University.

Education

University of Essex, Colchester, UK

PhD, Computer Science **Oct. 2016 - Dec. 2020**

- Dissertation Topic: "Robot Learning Assembly Tasks from Human Demonstrations"
- Supervisor: Prof. Huosheng Hu

Xiamen University, Xiamen, CHINA

M.S., Computer Technology **Sep. 2013 - Jun. 2016**

- Dissertation Topic: "Developmental Learning Approach to Mobile Manipulator's Reaching Ability"

Harbin Engineering University, Harbin, CHINA

B.Eng., Automation(Control theory) **Sep. 2009 - Jun. 2013**

Academic service

Journal and Conference Reviewer **Jul. 2020 - present**
International Journal of Automation and Computing (IJAC)
International Conference on Robotics and Automation (ICRA)
Robotics and Computer-Integrated Manufacturing (RCIM)

Publications

Zhu, Z. and Hu, H., 2018. Robot learning from demonstration in robotic assembly: A survey. *Robotics*, 7(2), p.17.

Wu, R., Zhou, C., Chao, F., **Zhu, Z.**, Lin, C.M. and Yang, L., 2017. A developmental learning approach of mobile manipulator via playing. *Frontiers in neurorobotics*, 11, p.53.

Chao, F., **Zhu, Z.**, Lin, C.M., Hu, H., Yang, L., Shang, C. and Zhou, C., 2016. Enhanced robotic hand–eye coordination inspired from human-like behavioral patterns. *IEEE Transactions on Cognitive and Developmental Systems*, 10(2), pp.384-396.

Zhou, D., Chao, F., **Zhu, Z.**, Lin, C.M. and Zhou, C., 2016, June. A novel approach to a mobile robot via multiple human body postures. In *2016 12th World Congress on Intelligent Control and Automation (WCICA)* (pp. 1463-1468). IEEE.

Zhu, Z., Chao, F., Zhang, X., Jiang, M. and Zhou, C., 2015, August. A developmental approach to mobile robotic reaching. In *International Conference on Intelligent Robotics and Applications (ICIRA)* (pp. 284-294). Springer, Cham.

Chao, F., Sun, Y., Wang, Z., Yao, G., **Zhu, Z.**, Zhou, C., Meng, Q. and Jiang, M., 2014, July. A reduced classifier ensemble approach to human gesture classification for robotic Chinese handwriting. In *2014 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)* (pp. 1720-1727). IEEE.

PAPER UNDER REVIEW

Zhu, Z. and Hu, H., 2020. A Novel Skeleton-Joint Mapping Framework for Robot Learning Assembly Skills from Observing Human Demonstrations, *Robotics and Autonomous Systems*.

CONFERENCE PRESENTATION

Zhu, Z., Hu, H. and Gu, D., 2018, September. Robot Performing Peg-in-Hole Operations by Learning from Human Demonstration. In *2018 10th Computer Science and Electronic Engineering Conference (CEEC)* (pp. 30-35). IEEE.

COMPUTER SKILLS

- ROS: four-year research experience with Baxter robot in my PhD project, teaching experience with ROSbot mobile robot.
- C/C++: three-semester experience as a Graduate Laboratory Assistant, hands-on experience with Pioneer mobile robot, EMoRo robot, Kinect sensor, ROSbot mobile robot, etc.
- Python: two-year teaching experience with NAO and Pepper robot.
- MATLAB: teaching experience with EMoRo robot.