Derong Jin

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Education

- **Nanyang Technology University** — Singapore
  Master of Science - Computer Control and Automation — *Aug. 2021 - now*
  - School of Electrical and Electronic Engineering (EEE).
  - Courses: Machine Vision, Generic Algorithms and Machine Learning, Neural and Fuzzy Systems.
- **Beihang University** — Beijing, China
  Bachelor of Engineering - Mechanical Engineering ***(with honors)*** — *Sept. 2017 - Jun. 2021*
  - School of General Engineering; GPA(3.76/4.00, 89.6/100); ranking (7/42).
  - Courses: Calculus (99/100), Computer Science and Programming (93/100), Intelligent Robotics (96/100), Automatic Control (100/100), Big Data and Brain-inspired Intelligence (94/100).

Publications

- *Yi-Jun Li,* ***De-Rong Jin*** *(joint first author), Miao Wang, Jun-Long Chen, Frank Steinicke, Shi-Min Hu and Qinping Zhao.* Detection Thresholds with Joint Horizontal and Vertical Gains in Redirected Jumping. Proceedings of IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR 2021), 95-102, 2021.
- *Yi-Jun Li, Miao Wang,* ***De-Rong Jin****, Frank Steinicke, Shi-Min Hu and Qinping Zhao.* Effects of Virtual Environments and Self-representations on Redirected Jumping. IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (IEEE VRW 2021), 464-465, 2021.

Research Experience

- **Rapid-Rich Object Search Lab (ROSE), NTU** — Singapore
  Postgraduate dissertation, supervisor: Prof. Tan Yap Peng & Dr. Shan Lin — *Sept. 2021 – now*
  - Topic: Unsupervised Domain Adaptative Person Re-Identification.
  - Now researching on the SOTA algorithms and trying to improve the performance of UDA preson reid models.
- **inDeco, R&D Center** — Beijing, China
  Algorithm engineering intern — *Apr. 2021 – Jun. 2021*
  - Topic: Search by image.
  - Used deep learning model to complete texture image retrieval by extracting texture features, and the source code was used by the company.
- **Peng Cheng Laboratory** — Shenzhen, China
  State Key Laboratory of Virtual Reality Technology and Systems — Beijing, China
  Research intern, supervisor: Prof. Miao Wang & Prof. Shimin Hu — *Nov. 2019 - Nov. 2020*
  - Topic: Rredirected jumping in virtual reality.
  - Programmed with Unity3D to create a experimental environment required for the user study.
  - Used SPSS, MATLAB, and Python to calculate and analyze the detection thresholds as 2D continuous curves rather than discrete points with simultaneous horizontal and vertical gains in redirected jumping through a novel user study.
  - Conducted a comprehensive user study which investigated the effects of virtual environments and self-representations on the perception and physical performance of redirected jumping.
  - Two papers were accepted by IEEE VR 2021! (one oral presentation and one poster.)
- **Human-Machine Interaction Lab** — Beijing, China
  Research intern, supervisor: Prof. Yuru Zhang — *Jan. 2019 - Dec. 2020*
  - Topic: Virtual reality modeling technology based on tactile texture feedback.
  - Designed a simple external device which could generate tactile texture feedback to help users obtain texture feedback with different degrees of thickness.
  - Used Unity3D to create a demo virtual environment for the project.
  - This project had attended National College Students Innovation and Entrepreneurship Training Project, which finally been awarded the **Excellent** Project! (the highest level, rank first in our school.)

Other Projects

- **Electronic and control system design of Eurobot Competition 2021** *Nov. 2020 - Jun. 2021*
  Undergraduate capstone project, supervisor: Prof. Abdelkader EL Kamel
  - Design of the whole electronic hardware system and control strategies of an autonomous small robot for Eurobot Competition 2021.
  - Used STM32 and Raspberry Pi to serve as slave / master computer of the robot.
  - Employed Python language to program ROS system embedded in the Raspberry Pi, C language to program FreeRTOS system embedded in the STM32.
- **UAV intelligent obstacle avoidance based on deep reinforcement learning** *Dec. 2020*
  Course project, supervisor: Prof. Zhijun Meng
  - Used image information captured by the camera and distance information captured by the range sensor to represent the 'state' of the UAV, and then got the Q values through the neural networks.
  - Adjusted key hyper-parameters such as reward function, learning rate, number of neurons and number of network layers, etc. to train a deep reinforcement learning model that can successfully complete the obstacle avoidance task.
- **Multiple UAV collaborative track navigation based on Q learning** *May 2020*
  Course project, supervisor: Prof. Baochang Zhang
  - Used the knowledge of reinforcement learning, fulfill information sharing and collaboration and the real-time route planning of multiple UAVs based on single UAV route planning.

Honors and Awards

- 2018-2020 Studies Excellent Scholarship of BUAA (Three Times, Top 10%)
- 2019 University-level Outstanding Student Cadres of BUAA (Top 5%)
- 2017 Excellent Scholarship for Freshman of BUAA (Top 5%)
- 2017 School-level Excellent Student (Top 5%)

Skills

- Python, pytorch, Unity, MATLAB, SPSS, SolidWorks, AutoCAD, CATIA, ANSYS, LaTex