

# 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.
  - 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); IELTS: 7.
  - 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 Qingping 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), 95-102, 2021.
- *Yi-Jun Li*, Miao Wang, **De-Rong Jin**, Frank Steinicke and Qingping Zhao. Effects of virtual environment and self-representations on perception and physical performance in redirected jumping. Virtual Reality & Intelligent Hardware, 3(6): 451-469, 2021.

## RESEARCH EXPERIENCE

- **Rapid-Rich Object Search Lab (ROSE@NTU)** Singapore  
*Dissertation research, supervisor: Prof. Yap-Peng Tan & Dr. Shan Lin* Sept. 2021 - now
  - Topic: Unsupervised Domain Adaptive Person Re-Identification.
  - Now researching on the SOTA algorithms and trying to improve the performance of UDA person reid models.
- **inDeco Inc., R&D Center** Beijing, China  
*Algorithm engineering intern* Apr. 2021 - Jun. 2021
  - Topic: image retrieval.
  - 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 assistant, supervisor: Prof. Miao Wang & Prof. Shimin Hu* Nov. 2019 - Nov. 2020
  - Topic: Redirected 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.
  - One paper was accepted by IEEE VR 2021.
- **Human-Machine Interaction Lab** Beijing, China  
*Research assistant & Group leader, 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 achieved **Excellent Project Award** in the National College Students' Innovation and Entrepreneurship Training Project Competition. (the highest level, rank first in our school.)

## OTHER PROJECTS

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- **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

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- 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

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