University of California, Berkeley
Electrical Engineering & Computer Science
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Jialiang Zhao

Education

University of California, Berkeley | Berkeley, CA, USA — 08/2017 – 05/2018 (expected)
Berkeley Global Access Exchange Program
Current Enrolled Relevant Coursework (GPA to be released in late December):
- Artificial Intelligence
- Introduction to Robotics

Beijing Institute of Technology | Beijing, China — 09/2014 – 05/2018 (expected)
Automation & Electrical Engineering | B.S. in Automatic Control
Major GPA: 94.5/100 | Overall GPA: 92.2/100 | Ranking: 1/30 (Every semester)
Relevant Coursework
- Control Theory & Optimization
- Pattern Recognition & Machine Learning
- Probabilistics & Random Process
- Linear & Non-linear Systems

Research Experiences

Active/Passive Upper Limb Assistive Exoskeleton — UCB HART Lab (Formerly Teleimmersion Lab)
Supervisor: Prof. Ruzena Bajcsy — 07/2017 – 05/2018 (Expected) | EECS Department | UC Berkeley
- Achieved modelling and robust control with motion prediction and optimal control based on motion capture of people with disabilities.
- Designed and built an active/passive mechanism (powered by servos and elastic bands) which could be mounted to human arms and provide extra force on demand in lifting.
- Built a MATLAB interface which could be used in collecting, visualizing, manipulating with and analyzing data.

EmoNet – An Emotion Detection Network in Text-based Systems — Lab of Intelligent Pattern Recognition
Supervisor: Prof. Qi Gao — 01/2017 – 06/2017 | School of Automation | Beijing Institute of Technology
- Achieved 72% top-1 accuracy (best state-of-art: 69%) in text-based Chinese dialogue systems with CNN (parallel modified VGG net).
- Presented an encoding method as pre-processing step which addressed the issue with traditional methods (segmentation, keyword extraction, etc.) that could lose linguistic features.
- Built EmoWeb - an online sampler which allows community attribution of training samples. Built with Django, SQLite, and CSS.

Intelligent Tennis Ball Collecting & Serving Robot — National Lab of Intelligent Control & Complex System
Supervisor: Prof. Hongbin Ma — 2015 – 2017 | School of Automation | Beijing Institute of Technology
- Achieved obstacle avoidance with 6 distance sensors mounted on robot using fuzzy control; presented a feature extraction method with multi-color-channel fusion, which could be used together with mean-shift and achieve high-performance object traction; achieved monocular SLAM with LSD-SLAM.
- Built a web-based monitor and remote control interface with Python Flask; built a voice control interface with iFly dataset.
- Designed a ball collecting & serving 2-in-1 mechanism.

Anti-sproofing System in Facial Recognition — National Lab of Intelligent Control & Complex System
Supervisor: Prof. Hongbin Ma — 2016 | School of Automation | Beijing Institute of Technology
- Achieved 97% success rate in preventing picture, video, and 3D model hackings with: (a) stereo vision to check whether inputs were flat (b) motion detection to prevent static photo and 3D model hacking (c) frame detection to check whether input images were from screens or photos

Publications

Papers

1. **J. Zhao**, H. Ma, J. Shi, and Y. Liu. "Introduction and Initial Exploration to an Automatic Tennis Ball Collecting Machine." *IEEE European Conference on Mobile Robotics (ECMR), 2017* (poster presentation)
2. J. Shi, H. Ma, and **J. Zhao**. "Web-Based Human Robot Interaction via Live Video Streaming and Voice." *International Conference on Intelligent Robotics and Applications (ICIRA), 2017. Lecture Notes in Computer Science, vol 10462. Springer, Cham*
3. **J. Zhao** and Q. Gao. "Annotation and Detection of Emotion in Text-based Dialogue Systems with CNN." *arXiv:1710.00987*

Patents († Under review)

Patent of Invention, P. R. China
- High-efficiency Automatic Tennis Ball Collecting Machine †
- Tennis Ball Collecting & Serving Robot †

Patent of Utility, P. R. China
- A ball collecting and serving two-in-one framework †

Patent of Software, P. R. China
- A web-based monitoring system

Honors & Awards

- **National Scholarship** of 2015 and 2016 (Twice) | Top 5 in 320
- Scholarship of Academician Zhou, Liwei, 2016 | **Two undergraduate winners in Beijing Institute of Technology**
- **Outstanding Student** of Beijing Institute of Technology of 2015, 2016, and 2017 (Three times) | Top 2 in 320
- National Outstanding Youth League Member of 2016 | **As the only one undergraduate winner in Beijing (20 in China)**
- Beijing Institute of Technology **First Prize Scholarship** | Six times in total (every semester since enrolled)
- Siemens Cup National Undergraduate Contest on **Automation**, 2015 | First Prize | Top 3 in 50 teams
- Intel Cup National Contest on **Embedded System** Design, 2016 | Third Prize | Top 7 in 25 teams
- Century Cup Contest on **Extracurricular Academic and Technical Works** of 2015 and 2016
  Special Prize twice, Top 2 in 60 teams | First Prize once, Top 5 in 60 teams