

EDUCATION

Harbin Institute of Technology (GPA: 86/100 - 14%)	2017.9 - Now
Master's Degree of Mechanical Engineering	Shenzhen, China
Harbin Institute of Technology (GPA: 75.2/100)	2013.9 - 2017.7
Bachelor's Degree of Mechanical Engineering	Harbin, China

HONORS

First-class <i>scholarship of Harbin Institute of Technology</i>	2018 & 2019, Shenzhen
International Runner-up of <i>ICRA 2018 DJI RoboMaster AI Challenge</i>	2018.5, Brisbane, Australia
Best Engineering Award of <i>ABU Robocon 2015</i>	2015.6, Zoucheng
National 2nd prize of <i>National High School Physics League</i>	2013.10, Harbin
National 2nd prize of <i>National High School Mathematics League</i>	2013.9, Harbin
National 3rd prize of <i>National High School Biology League</i>	2012.8, Harbin

PAPERS & PATENTS

- [1] Song, Y. S., Zhang, T. S., Li, B. *, 2018. "[A Virtual Experiment Platform for 2D Robot Autonomous Navigation Algorithm System Based on ROS](#)". *IEEE International Conference on Information and Automation*. pp.989-994.
- [2] Song, Y. S., Huang, H. L., Liu, F., Xi, F. F. *, Zhou, D. Y., and Li, B. *, 2019. "[Torque Estimation for Robotic Joint With Harmonic Reducer Based on Deformation Calibration](#)". *IEEE Sensors Journal*. (Under review)
- [3] Song, Y. S., Wu, J. H., and Huang, H. L. *, 2019. "[A Novel Heavy-Load Nursing Robotic Arm - Design and Safety Control Based on Tactile Skin](#)". *IEEE International Conference on Robotics and Biomimetics*. (Waiting submitting)
- [4] Li, B., Wu, J. H., Huang, H. L., Song, Y. S., Liu, F., Ning, Y. H., and Chen, J. A., 2018. "[A Novel Kind of 6-DOF Bionic Manipulator Arm](#)". *C.N. Patent No. 201811515893.8*.
- [5] Li, B., Wu, J. H., Liu, F., Xu, W. F., Huang, H. L., Song, Y. S., and Liang, J. L., 2018. "[A Novel Kind of Double-arm Robot for Nursing Tasks](#)". *C.N. Patent No. 201811515894.2*.

PROJECT EXPERIENCE

Research on Safety Control Strategy of Heavy-Load Robotic Arm for Nursing Task	2018.6 - 2019.7
<ul style="list-style-type: none"> ▣ Designed the structure and hardware system of the 6 DOF heavy load series manipulator; ▣ Proposed two novel torque estimation methods for robotic joint with harmonic reducer (<i>Submitted one paper</i>); ▣ Designed tactile robotic skins and proposed a safety control strategy based on it (<i>Submitted one paper</i>); [Video] ▣ Studied the fusion methods of impedance control algorithms based on joint space and task space. 	
Cooperative robots with autonomous navigation, recognition and decision systems	2017.9 - 2018.5
<ul style="list-style-type: none"> ▣ Improved the DJI's robotic chassis & the motion control embedded system; ▣ Designed a multi-sensor fusion autonomous localization, mapping and navigation system (<i>Published one paper</i>); [Video] ▣ Realized the real-time detection and tracking system of enemy robots' armor decks based on YOLOv2. ▣ Designed a multi-mode autonomous decision system for two cooperative robots [Code] 	
Design and Manufacture of Commercial Chocolate 3D Printers	2015.9 - 2017.6
<ul style="list-style-type: none"> ▣ Proposed a novel extrusion and heating system specializing for chocolate printing; ▣ Solved the tricky plugging problem by many experiments about the melting and flowing of chocolate; ▣ Started a small technology service company and designed a 3D printing training center for a vocational school. 	

INTERNSHIP & EXCHANGE

Robotics Robotics Ltd. (PI Electronics H.K Ltd.)	2017.7 - 2017.8, Shenzhen & H.K.
▣ Designed the control system of an automatic production line based on CAN-open.	Assistant Engineer
Korea Advanced Institute of Science and Technology (KAIST)	2016.7 - 2016.8, Korea
▣ Contributed to the designing of a robotic system for automotive paint spraying.	International Summer School
Harbin Aizhilan Technology Development Co., Ltd.	2016.3 - 2016.6, Harbin
▣ Designed and Manufactured a capsule powder fluid Cut-off Valve.	Assistant Engineer