

EDUCATION

Carnegie Mellon University (CMU)	08/2017-05/2019
<ul style="list-style-type: none"> MS in Mechanical Engineering GPA: 3.89/4.0 	
Shanghai Jiaotong University (SJTU)	01/2016-07/2016
<ul style="list-style-type: none"> Mechanical Engineering (Joint Program) GPA: 3.83/4.3 	
Harbin Institute of Technology (HIT)	08/2013-06/2017
<ul style="list-style-type: none"> BEng in Mechanical Design, Manufacturing and Automation GPA: 3.76/4.00 	

RESEARCH EXPERIENCE

Multi-resolution A* Algorithm -- Search-based Planning Lab (CMU)	04/2019-Present
<ul style="list-style-type: none"> Research on leveraging search-based planners with multiple resolution action space to speed up the search and increase the success rate of planners. 	
Walker Project -- Search-based Planning Lab (CMU)	04/2019-Present
<ul style="list-style-type: none"> Implementing SLAM algorithms on Walker robot for its indoor navigation. Implementing planning algorithms on Walker robot for manipulation. Organizing vision-planning-grasping pipeline for grasping tasks on conveyor. 	
Cruze Project -- Search-based Planning Lab (CMU)	10/2018-04/2019
<ul style="list-style-type: none"> Responsible for SLAM module on Cruze humanoid robot. Organizing pipeline between planning and SLAM. 	
Planning Using Soft Duplicate Detection -- Search-based Planning Lab (CMU)	12/2017-02/2019
<ul style="list-style-type: none"> Exploring planning algorithm in continuous state space with soft duplicate detection scheme. Implementing machine learning techniques in penalizing states and map pattern recognition. Wrote a program in visualizing planning process. 	
Quad-rotor Trajectory Optimization -- the Robotics Institute (SJTU)	05/2016-06/2016
<ul style="list-style-type: none"> Being responsible for quad-rotor trajectory planning with dynamic constraints by using optimization techniques. Adopted differential smoothing algorithm to reduce jitter. 	
Small Wheeled Jumping Robot -- Lab of Advanced Actuation Technologies (HIT)	08/2015-01/2016
<ul style="list-style-type: none"> Designed cellular wheel structure force analysis. Completed circuit design of single chip microcomputer based on STM32 minimum system board. PID controller implementation. 	
National College "Freescall Cup" Smart Car Contest	09/2014-04/2015
<ul style="list-style-type: none"> Applied PID controller, Kalman filter and used Labview software to simulate and analyze the performance of the smart car. 	

COURSE PROJECTS

Power plant Substation-to-feeder Path Prediction -- Bayesian Machine Learning	02/2019-05/2019
<ul style="list-style-type: none"> Worked with Kevala company on predicting feeder-path endpoints by CNNs. Employed motion planning algorithms in generating the substation-to-feeder paths. 	
Offline Hand-written Chinese Characters Recognizing -- Pattern Recognition Theory	09/2018-12/2018
<ul style="list-style-type: none"> Implemented CNNs in recognizing hand-written Chinese characters. Implemented decision-trees, SVM to as baselines against CNNs in recognizing hand-written Chinese characters. 	
Inserting a curve into an Existing Two Dimensional Mesh -- Advanced Engineering Computation	03/2018-05/2018
<ul style="list-style-type: none"> Working on 2D mesh loading and rendering with OpenGL Library. Reproduce the work of one research paper about inserting a curve into one mesh figure in order to increase the smoothness on the edges between different components of this figure. 	
Aviation Game -- Engineering Computation	09/2017-12/2017
<ul style="list-style-type: none"> Designed a GUI for an aviation simulator. Achieved the basic functionality of an aviation game including control of airplane based on kinematics and dynamics. 	

ACTIVITIES

Visitor, HIT Robot Group	07/2015
<ul style="list-style-type: none"> Technical communications on combination of production and academia research about industrial robots. 	
Volunteer, HIT Library	02/2014-07/2014
<ul style="list-style-type: none"> Provided services to students. Worked with the librarian to organize books. 	
Member, Charitable Association to Transmit Childhood	09/2013-01/2014
<ul style="list-style-type: none"> Organized and participated in public service activities for children with autism. Being responsible for designing activities and games that benefits mental health in autistic children. 	

HONORS & AWARDS

- People's Scholarship in China for three consecutive years 12/2013-12/2015
- SMC Scholarship 09/2015
- 2nd Prize in National College "Freescale Cup" Smart Car Contest 04/2015
- Shanghai Huiyi Scholarship 09/2014
- 2nd Prize in annual project at HIT 09/2014

PUBLICATIONS

- Wei Du, Fahad Islam and Maxim Likhachev. *Multi-Resolution A**. (under review)
- Wei Du, Sung-Kyun Kim, Oren Salzman and Maxim Likhachev. *Escaping Local Minima in Search-Based Planning using Soft Duplicate Detection*. (IROS 19')
- Wei Du and Yingxiang Liu. (2017). Design on Test System and Experimental Research of Foot Piezoelectric Ultrasonic Motor. Graduation Thesis, School of Mechatronics Engineering, Harbin Institute of Technology, Harbin, China. ^[1]_[SEP]

SKILLS

- Programming: C/C++, Java, Python, MATLAB
- Operation System: Linux, MacOS

RELATED COURSEWORK

Data Structures and Algorithms for Engineers;
Engineering Computation;
Advanced Engineering Computation;
Planning Techniques for Robotics;
Java for Application Programmers;
Pattern Recognition Theory;
Bayesian Machine Learning for Scientists and Engineers;
Robot Localization and Mapping;
Engineering Optimization;