Wei Wang

wei.wang.bit@outlook.com
(+86) 156-5077-2089
Magic-wei
magic-wei
Beijing, China

C++
Python
Linux
ROS
V-REP

Education

Beijing Institute of Technology (BIT), Beijing, China 2015 – Present

Ph.D. in Mechanical Engineering, expected June 2021

Advisors: Prof. Huiyan Chen

Harbin Institute of Technology at Weihai (HIT at Weihai), Weihai, China 2011 – 2015

B.S. in Automobile Engineering

GPA: 3.53/4 **RANK:** 9/135

Research Interests

- MPC-based Motion Planning and Control
- Learning-based Control algorithms
- Unified Framework for Adaptive Motion Control

Experience

Path Tracking Algorithms Review and Verification Oct. 2018 – Dec. 2018

Sponsor, Leader

Brief introduction:

- Developed new framework for motion control algorithms based on ROS for better developing and verifying, which unified the interfaces used in real vehicle platforms and V-REP simulation platforms
- Led a group of four beginner-level members to review papers and implement some useful algorithms which are verified in V-REP and LandCruiser unmanned ground vehicle

Unmanned Ground Vehicle Challenge 2018 Nov. 2017 – Sep. 2018

Core Leader

Brief introduction:

- Led a group of nine to redesign x-by-wire actuators for throttle and braking and develop motion control algorithms for LandCruiser unmanned ground vehicle
- Co-developed and verified kinematic and dynamic-based MPC path tracking controller
- Constructed motion control framework based on ROS and migrated motion control algorithms from RCS to ROS
- Developed a kinematic-based MPC path tracking algorithm in Frenet frame with delayed control

Autonomous Minibus Demonstration Oct. 2017 – Dec. 2017

Core Member

Brief introduction:

- Verified and improved path tracking algorithms for minibuses trial operation in Shenzhen, China.

4D/RCS Framework Development Dec. 2016 – May. 2017

participant

Brief introduction:

- Migrated path tracking algorithms to RCS framework

Unmanned Ground Vehicle Challenge 2016 Jun. 2016 – Sep. 2016

Core Member

Brief introduction:

- Designed, implemented and refined automatic shifting mechanisms and automatic steering mechanisms for two unmanned ground vehicles, which have been used since then
- Cooperated with two other members to be responsible for hardware maintenance of two unmanned ground vehicles

Skills

- **Programming Languages:** C++ > Matlab = Python > Bash > Cmake = Lua ...
- **Platform:** Linux, Windows
- **Tools:** ROS, V-REP, Clion, CarSim, RCS ...
- **Development:** Perform the test-driven development work-flow with code reviews while following the Google C++ Style guide and the typical git work-flow.

Honors and Awards

- Second-class Academic Scholarship for Ph.D. student, BIT 2018
- Part of BIT team that won the third place in Unmanned Ground Vehicle Challenge 2018 2018
- First-class Academic Scholarship for Ph.D. student, BIT 2017
- First-class Academic Scholarship for Master Student, BIT 2016
- First-class Academic Scholarship for Master Student, BIT 2015
- Third-class Academic Scholarship for B.S. student, HIT at Weihai 2014
- Third-class Academic Scholarship mor B.S. student, HIT at Weihai 2013
- First-class Academic Scholarship for B.S. student, HIT at Weihai 2012

Papers

1 **Wei Wang**, Huiyan Chen, Jianhao Ma, Kai Liu and Jianwei Gong, "**Path Tracking for Intelligent Vehicles in Frenet Frame with Delayed Control,**" Acta Armamentarii, 2018, under review. (in Chinese)