



LEI YANG

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🔗 YangLei1993

👤 Lei Yang

in Lei Yang

🏠 Beijing, China

C++

Python

Linux

ROS

Carla

V-REP

🎓 EDUCATION

Beijing Institute of Technology (BIT), Beijing, China

2016 – Present

PhD in Mechanical Engineering, expected 2021

Advisors: Prof. Jianwei Gong

University of California, Berkeley (UCB), California, USA

2019 – 2020

Visiting Student in MSC Lab

Advisors: Prof. Masayoshi Tomizuka

Northeast Agricultural University (NEAU), Harbin, China

2012 – 2016

B.S. in Computer Science and Technology

GPA: 3.57/4 **RANK:** 1/143

👥 EXPERIENCE

Trajectory Planning Based on Imitation Learning

Feb. 2020 – Jul. 2020

Core Member

Brief introduction:

- Extract the motion planning algorithm based on the traditional A star method and reconstruct the input and output interface of the algorithm. Package the algorithm into a shared library for direct call of the main program, and use simulation data for reliability testing
- Develop the interface program for python language program to call the c++ language algorithm library. Using real-world data set to test program function and interface reliability.

Unmanned Ground Vehicle Challenge

Dec. 2017 – Sep. 2018

Core Leader

Brief introduction:

- Designed and constructed a planning system framework
- Conceived and designed a global planning and re-planning algorithm based on topology maps
- Developed a mixed local path planning algorithm
- Developed a goal point extraction algorithm for sparse waypoints

Intelligent Minibus Development

Oct. 2017 – Dec. 2017

Core Member

Brief introduction:

- Implemented system setup and interface debugging
- Debugging and improving a sub-map based path planning algorithm

Intelligent Bus Development

Jun. 2017 – Dec. 2017

Core Member

Brief introduction:

- Implemented system setup and interface debugging
- Debugging and improving a lane based path planning algorithm

4D-RCS Framework Development

Dec. 2016 – May. 2017

Core Member

Brief introduction:

- Implemented framework construction and interface definition
- Implemented the migration and modularization of planning algorithms
- Developed the GUI program

6x6 differential driven platform development

Oct. 2016 – Dec. 2016

Participant

Brief introduction:

- Participate in system building and communication testing
- Participate in algorithm debugging and improvement

Unmanned Ground Vehicle Challenge

Jun. 2016 – Sep. 2016

Participant

Brief introduction:

- Responsible for debugging the path planning algorithm
- Implemented a path planning algorithm for target search

⚙️ SKILLS

- Programming Languages: C++ > Python = Matlab > Bash ...
- Platform: Linux, Windows
- Tools: Carla, ROS, Clion, V-REP, RCS, OpenCV ...

♥️ HONORS AND AWARDS

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|--|------|
| • CSC Scholarship, CSC | 2019 |
| • Second-class Academic Scholarship, BIT | 2019 |
| • Second-class Academic Scholarship, BIT | 2018 |
| • Part of BIT team that won the third place in competition | 2018 |
| • PhD Student Scholarship, BIT | 2017 |
| • Master's Scholarship, BIT | 2016 |
| • Excellent Student Scholarship, NEAU | 2015 |
| • Excellent intern at Oracle Harbin Training Base | 2015 |
| • First-class Academic Scholarship and Outstanding Student Leaders, NEAU | 2014 |
| • National Scholarship and Outstanding Student, NEAU | 2013 |

📖 PAPERS

- 1 **Lei Yang**, Qi Wang, Yingqi Tan, Jianwei Gong. "Autonomous Vehicle Path Planning Considering Dwarf or Negative Obstacles," IV2019, pp. 1021-1026, doi: 10.1109/IVS.2019.8814129.

- 2 **Lei Yang**, Jianwei Gong, Guangming Xiong, Tian Yang, Mengze Wu, Sheng Zhang. "Unmanned Vehicle Path Planning for Unknown Off-road Environments with Sparse Waypoints," ITSC2019, pp. 3136-3141, doi: 10.1109/ITSC.2019.8917191.
- 3 Yang Yu, Chao Lu, **Lei Yang**, Zirui Li, Fengqing Hu, Jianwei Gong. "Hierarchical Reinforcement Learning Combined with Motion Primitives for Automated Overtaking," IV2020, pp. 1-6, doi: 10.1109/IV47402.2020.9304815.
- 4 Tian Yang, Guangming Xiong, Yu Zhang, **Lei Yang**, Bo Tang, Mengze Wu, Jianwei Gong. "A Practical Planning Framework and Its Implementation for Autonomous Navigation in Off-road Environment," IV2019, pp. 1571-1576, doi: 10.1109/IVS.2019.8814219.
- 5 Mengze Wu, Hui Jin, Bo Tang, **Lei Yang**, Tian Yang, Jianwei Gong. "Constructing Topological Road Network of Wild Environment using Google Earth Pro," ITSC2019, pp. 2095-2100, doi: 10.1109/ITSC.2019.8917090.