



Xiaotong Li

Nationality: Chinese **Date of birth:** 22/05/2001 **Gender:** Male

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Home: Zusterlaan 154b Delft, 2611MP Delft (Netherlands)

EDUCATION AND TRAINING

Bachelor of Engineering

Nanjing University of Aeronautics and Astronautics [01/09/2019 – 20/06/2023]

City: Nanjing | Country: China | Field(s) of study: Aerospace Engineering | Final grade: 89/100 | Thesis: Gradient Enhanced Neural Networks for Optimization of Airfoils

Summer School

Korea Advanced Institute of Science & Technology (KAIST) [01/07/2022 – 31/07/2022]

City: Daejeon | Country: South Korea | Field(s) of study: Robotics

Master of Science

Technische Universiteit Delft [01/09/2023 – Current]

City: Delft | Country: Netherlands | Field(s) of study: Robotics

WORK EXPERIENCE

ROS Assistant Engineer(Intern)

BJROBOT Technology Co. Ltd. [20/04/2023 – 01/06/2023]

City: Beijing | Country: China

Develop TurtleBot3 to do multiple missions(reduplicate the function of Autorace).

ROS Engineer(Intern)

Bayer Crop Science Co. Ltd. [01/07/2023 – 20/08/2023]

City: Shanghai | Country: China

Use Isaac Sim to build a vivid-to-life simulation platform of automated guided vehicles in a setting of intelligent agriculture.

PROJECTS

[03/2024 – 04/2024]

Model Predictive Control Approach for Multi-UAVs Planning and Motion Control We implemented and simulated a Model predictive control (MPC) approach for multi-UAVs control. A state-based MPC approach for signal UAV position control was designed and was used to explore the effect of parameters on the results. Meanwhile, we designed a path-planning method and an output MPC method with trajectory tracking and collision avoidance for multiple UAVs in complex environments. A stability analysis is also performed to prove the stability of the approach.

Links: <https://bojack-bj.github.io/projects/mpc/> | https://github.com/PatrickYang-5/MPC_drones

[12/2023 – 01/2024]

Two-stage Multi-UAV Planning Solution Combining A*, Model Predictive Control, and Artificial Potential Field

We presented a global and local two-stage multi-UAV planning solution that incorporates A*, model predictive control (MPC), and artificial potential field (APF) to realize the path planning of UAV clusters in dynamic environments. This navigation solution can empower multiple UAVs to avoid obstacles and collaborate in complex environments.

Links: <https://youtu.be/RkOqEFh1KFM> | <https://bojack-bj.github.io/projects/multi-uav/>

[04/2022 – 04/2023]

Gradient Enhanced Neural Networks for Optimization of Mars Low Reynold Number Airfoil

- Calculated aerodynamic parameters of airfoils at different angles of attack, Ma numbers and Re numbers.
- Constructed mSANN with TensorFlow using aerodynamic parameters and corresponding gradient information as training samples.
- Optimized Mars low Reynolds number airfoil design by using mSANN as a surrogate model coupled with gradient optimization software package SNOPT.

Link: <https://bojack-bj.github.io/projects/gradient/>

[03/2021 – 03/2022]

Dynamic Formation Transformation and Obstacle Avoidance of Unmanned Vehicles

- Implemented autonomous obstacle avoidance based on slam and multi-vehicle communication through wireless networking, mainly implemented the control of unmanned vehicles through the ros system.
- Implemented mapping and navigation functions with ros, and conducted simulation tests with the gazebo.
- Nominated to the 15th National College Student Innovation and Entrepreneurship Annual Conference.

Link: <https://bojack-bj.github.io/projects/dynamic-formation-transformation-and-obstacle-avoidance-of-unmanned-vehicles/>

HONOURS AND AWARDS

[04/2022] Nanjing University of Aeronautics and Astronautics

First Prize of Academic Scholarship

[04/2021] Nanjing University of Aeronautics and Astronautics

First Prize of Academic Scholarship

[04/2020] Nanjing University of Aeronautics and Astronautics

First Prize of Academic Scholarship

[09/2021] Nanjing University of Aeronautics and Astronautics

Second Prize of Outstanding Student Scholarship

[09/2020] Nanjing University of Aeronautics and Astronautics

Second Prize of Outstanding Student Scholarship

[09/2021] Nanjing University of Aeronautics and Astronautics

Merit Student

[09/2020] Nanjing University of Aeronautics and Astronautics

Merit Student

LANGUAGE SKILLS

Mother tongue(s): Chinese

Other language(s):

English

LISTENING B2 READING C2 WRITING C1

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

COMPETITIONS

[08/2021]

RoboMaster2021 Super Match Play Competition (Central Division)

- Responsible for the function implementation of the radar station, that is, using the Yolo model to identify enemy robots and mark them on our map.
- Won the second prize.

Link: <https://www.robomaster.com/en-US>

[04/2021]

The 6th Jiangsu Provincial Engineering Training Comprehensive Ability Competition for College Students

- Drew the aircraft model and calculated the aerodynamic characteristics with fluent, and produced simulation animations with 3DMax.
- Won the second prize.

[04/2022]

RoboCup China Open

- Responsible for establishing point clouds for the depth information read by the depth camera and performing plane extraction and calculation of characteristic shapes.
- Won the second prize.