Curriculum Vitae

Shilong Ji

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Education

August 2021— June 2024
Degree: Master of Engineering in Automation Science and Engineering
Where: Beihang University, Beijing, China
GPA: 3.83/4.0 (ranking 2/39)
Research:
Quadrotor control, Bicopter control, Robotics
Advisor: Yingxun Wang, Xiang He

August 2017— June 2021
Degree: Bachelor of Engineering in Automation Science and Engineering
Where: Beihang University, Beijing, China
GPA: 3.85/4.0 (ranking 22/205)
Research:
Event Camera-base vision, Robotics
Advisor: Zhihao Cai, Jiang Zhao

Publications

1 Jiang Zhao, **Shilong Ji**, Zhihao Cai, Yiwen Zeng, Yingxun Wang, "Moving Object Detection and Tracking by Event Frame from Neuromorphic Vision Sensors", Biomimetics 2022

2 Yingxun Wang, **Shilong Ji**, Zhihao Cai, Jiang Zhao, "An Event-based Angle Measurement Method", ICGNC 2022

Research

August 2022— Now
Project: Agile control of a new Bi-copter UAV
Where: Comb Lab, Beihang University, Beijing, China
Advisor: Yingxun Wang, Xiang He
Contributions:

- Use Solidworks to help design mechanical structure of a new bi-copter, use PID ans SO3 method to design a proper controller. The bi-copter is capable of manual flight and trajectory tracking with acceleration up to $4.8\,\mathrm{m/s^2}$ and velocity up to $2.1\,\mathrm{m/s}$.

August 2021— February 2022
Project: Moving Object Detection and Tracking by Event Frame [1]
Where: Comb Lab, Beihang University, Beijing, China
Advisor: Zhihao Cai, Jiang Zhao
Contributions:

- Help design an object detection method using both event frames from an event camera and standard frames from a traditional camera. The algorithm is able to detect fast moving people (speed up to ???)with low latency (less than ???).
- Finish paper-writing and revision.

February 2021— July 2021

Project: Event-driven visual measurement and pose control [2]
Where: Comb Lab, Beihang University, Beijing, China
Advisor: Zhihao Cai, Jiang Zhao
Contributions:

- Design an Event-based method to measure the angle of the pendulum rod. It receives event streams from an event camera, generates event frames from streams, uses an EDLines detector to detect the rod, and finally sends the angle data to the controller.
- Help design an model-based controller for an inverted pendulum. The controller is built in Simulink, and PID method is mainly used. With the help of STM32 support package for MATLAB and Keil, it can be loaded on the target and serve as the controller.

Technical experience

Hardware
Verilog, STM32, Arduino, Protel, Altium Designer

Software
Matlab, Solidworks, C/C++, Python, Linux shell, TensorFlow

Honors and awards

- Outstanding student of BUAA (2018)
- Toclass Scholarship for Excellence BUAA (2018)
- Second Award for National Undergraduate Curling AI Challenge (2018)
- Second-class Scholarship for Excellence BUAA (2019)
- Second-class Scholarship for Excellence BUAA (2020)
- First-class Scholarship for Excellence BUAA (2022)
- Third Award for "Huawei Cup" The 18th China Postgraduate Mathematical Modeling Competition (2022)