JIAWEI TANG

(+852) 65531607 · jtangas@connect.ust.hk · https://garyandtang.github.io/

EDUCATION

Hong Kong University of Science and Technology; GPA: 3.86/4.3   2019.9 - 2021.8
Master of Philosophy in Electronic & Computer Engineering   *Full Scholarship*
Related courses: Convex optimization; Linear system theory; Networked control and estimation; Stochastic process

The Hong Kong Polytechnic University; GPA: 3.56/4.0   2014.9 - 2019.6
BEng(Hons) in Electronic & Information Engineering

POSITION INTERESTS

- **Robotic Control: Motion planning; Optimal control; Multi-agent system; Reinforcement learning**
- **Robotic Perception: State estimation; Computer vision; Positioning and mapping; Sensor fusion**

EXPERIENCE

Research Assistant at HKUST, worked with Prof. Ling Shi   2019.9-present

- **Motion Planning for Mobile Robots with Uncertainty**
  - Built the physical multi-robot testbed and ROS-based simulation platform from scratch.
  - Developed a motion planning framework with CILQR algorithm and MPC scheme.
  - Research on formation-based multi-robot collaborative parcel moving.
- **Optimal Control in Positive System**
  - Developed projection-based approach to solve linear quadratic control problem for positive system.

Research Intern at RI, CMU, worked with Prof. Michael Kaess   2018.6-2018.8

- **Automatic Extrinsic Calibration System of a Camera and a 3D LiDAR**
  - Developed an efficient extrinsic calibration toolbox for camera and 3D LiDAR with a user-friendly GUI.
  - Improved the calibration accuracy and system robustness. Report available in pp.140-144 of [RISS Journal]

Capstone Project Student at PolyU, worked with Prof. Kenneth Lam   2018.9-2019.5

- **Low Resolution Face Recognition**
  - Addressed the low-resolution face recognition with conventional method and deep-learning method.
  - Conventional method: match the LR images with HR images using multidimensional scaling.
  - DL method: guide the LR images' training with the feature difference between HR and LR images.
  - Developed a web-based demonstration system with Flask, HTML, Javascript and CSS.

Power Electronics Intern at ASM Pacific Technology   2017.6-2018.5

- **Project 1**: Designed feed-forward & PID control algorithm for digital controlled laser diode driver.
- **Project 2**: Simulated the performance of capacitance sensor in measuring the liquid height with MATLAB.
- **Project 3**: Developed a metal length measurement system with ADI ultrasonic sensor.

PUBLICATIONS

- **Jiawei Tang**, Yik Ben Wong, Zhengyu Fu, Nachuan Yang, Sil Kwong Tse, Ling Shi. "**Motion Planning for Mobile Robots with Uncertainty: A Model Predictive Control Approach**". *Preparing for IROS 2021.*
- Nachuan Yang, **Jiawei Tang**, Yik Ben Wong, Yuzhe Li, Shi Ling. "**Nonfragile Linear Quadratic Control of Positive Systems: A Projection-Based Approach**". *Submitted to TAC as technical note.*
- Sil Kwong Tse, Yik Ben Wong, **Jiawei Tang**, Peihu Duan, Suk Wai Winnie Leung, Ling Shi. "**Relative State Formulation-based Warehouse Multi-robot Collaborative Parcel Moving**". *Submitted to ICPS 2021.*

VOLUNTEER ACTIVITIES

- **Phnom Penh**, Cambodia, built solar panel charging stations for local villagers   2015.6
- **Phnom Penh**, Cambodia, built 2 libraries with obsolete container for local primal schools   2016.6,   2017.6
- **Ya'an**, Sichuan, China, built 3D-print zero-carbon building for local villagers   2017.9 - 2018.9
- International Student Ambassador: to promote Chinese traditional food and culture   2016.9 - 2017.6