

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

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- **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**
 - Developed a motion planning framework with constrained SLQ algorithm and MPC scheme.
 - Built the physical multi-robot testbed and ROS-based simulation platform from scratch.
 - 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

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- **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

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- **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