Gerry Chen

412-956-3047 https://gerry-chen.com gerry.chen2015@gmail.com

Education

Georgia Institute of Technology, PhD **08/2019 to Present**
School of Interactive Computing

- Robotics PhD under Dr. Frank Dellaert
- Factor graphs for kinodynamic motion planning

Duke University, BSE **08/2015 to 05/2019**
Pratt School of Engineering

- Electrical and Computer Engineering + Mechanical Engineering; Minors in Computer Science, Math
- 3.87/4.00 cumulative GPA, Dean's List every semester

Skills

- Strong command of Matlab and Python
- Proficiency in C++, Java, MATHEMATICA, LaTeX
- Embedded Software Development
- Path Planning + Classical Controls
- Eagle, SPICE, Solidworks, Autodesk Fusion
- Experimental design and sensor data acquisition

Work History

Integrated Control and Estimation Intern **06/2020 to Present**
Air Force Research Laboratory (Eglin AFB) - Dr. Adam Rutkowski

- Refine collaborative vehicle control with imperfect multi-vehicle trajectory estimations
- Compute optimal sensor measurement timing and inter-vehicle communication
- Compute optimal collaborative trajectories to minimize navigation uncertainty using factor graphs

PhD Research Assistant **08/2019 to Present**
Robotics Estimation and Control - Frank Dellaert

- Cable driven parallel robot (CDPR) design and control for painting graffiti

Controls Engineer Intern **05/2018 to 08/2018**
Deka R&D - Dirk Van Der Merwe

- Developed novel 2-wheel balancing control scheme with constrained wheel displacement (patent pending)
- Created multi-system integration over CAN, EtherCAT, RS232 to create hybrid wheeled/legged robot
- Developed stability control of robot w/ powered casters + differential steering to test high speed dynamics

Robotics Motion Planning Intern **01/2017 to 05/2018**
Intelligent Motion Labratory - Dr. Kris Hauser

- Submitted joint paper to IEEE International Conference on Robotics and Automation 2018 (Accepted 01/12/2018) - work funded by NSF Research Experiences for Undergraduates (REU) to implement a Precision Positioning Unit (PPU) on the Tele-Robotic Intelligent Nursing Assistant (TRINA)
- Coded (Python, C++) and tested max. continuous range / min. manipulatability arm configurations
- Fabricated polyurethane "finger" tip with integrated tactile sensor and 95.7% actuation success rate

Teaching Assistant **08/2016 to Present**
Georgia Institute of Technology
Duke University

Tutor **05/2014 to 05/2019**
Multiple Employers

Activities

Co-President **08/2015 to 07/2019**
Duke Electric Vehicles Team - 2x Guiness World Record holder

- President 2018-19, world record for most efficient electric vehicle at 27,482 MPGe
- Lead hydrogen fuel cell hybrid vehicle 2017-18, world record for most fuel efficient vehicle at 14,573 MPGe
- Increased fuel cell efficiency from 40% to 63% and designed super-cap array to increase vehicle eff. by 22%
- Built autonomous path-following car based on RTK GPS, internal sensors, and path planning algorithms