Gerry Chen

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Education

Georgia Institute of Technology, Ph.D. & M.S. **08/2019 to 12/2023 (Expected)**
School of Interactive Computing - Prof. Frank Dellaert

- Thesis: Replicating and Adapting Human Painting Motions
- 4.00/4.00 cumulative GPA

Duke University, B.S.E. **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

Work History

PhD Research Assistant **08/2019 to Present**
Georgia Institute of Technology - Prof. Frank Dellaert

- Graffiti robot system design (IEEE ICRA 2022) & Plant phenotyping robot (IEEE ICRA 2023)
- Factor Graphs, GTSAM, Simultaneous State Estimation and Optimal Control
- 3x 1st author publications, 3x 2nd author publication, 1x 3rd author publication

Software Engineer Intern: Autonomous Vehicle Perception **05/2021 to 08/2021**
Zoox - Dr. Subhasis Das

- Developed smoothing-based tracker for improved object tracking using sensor fusion
- My code achieved improvements in all tracking metrics for use in offline labeling, with 2 patents pending

Integrated Control and Estimation Intern – Secret Security Clearance (Inactive) **06/2020 to 08/2020**
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

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

- Co-first author on IEEE ICRA 2018 paper for robot actuation of human input devices (95.7% success rate)
- Coded (Python, C++) and tested max. continuous range / min. manipulatability arm configurations

Teaching Assistant **08/2016 to 12/2020**
Georgia Institute of Technology
Duke University

Skills

- Strong command of C++, Python, and Matlab
- Proficiency in HTML/CSS/Javascript, LaTeX
- Embedded Software Development
- State Estimation, Sensor fusion, SLAM
- Optimal Control, Cable-Driven Parallel Robots
- Eagle, SPICE, Solidworks, Autodesk Fusion 360

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