Gerry Chen

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Education

Georgia Institute of Technology, Ph.D. & M.S.   **08/2019 to 05/2024 (Expected)**
School of Interactive Computing – Robotics – Prof. Frank Dellaert & Seth Hutchinson

- Thesis: Rendering, Replicating, and Adapting Human Motions on a Cable Robot for Artistic Painting
- 3.96/4.00 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: Collaborative Embodied AI   **08/2019 to Present**
Georgia Institute of Technology - Prof. Frank Dellaert & Seth Hutchinson

- Robot Art on a Graffiti robot (ICRA 2022) & Plant phenotyping robot (IEEE ICRA 2023)
- Generative Art, Factor Graphs, GTSAM, Simultaneous State Estimation and Optimal Control
- 4x 1st author publications, 3x 2nd author publication, 1x 3rd author publication
- Course Instructor for CS 3630: Intro to Perception & Robotics (Summer 2022)

Computer Vision Intern: Agricultural Robotics   **05/2023 to 08/2023**
Verdant Robotics - Dr. Frank Dellaert

- Implemented (CUDA/C++) KLT Pose tracker to improve localization accuracy and robustness
- Implemented field-scale offline mapping / 3D reconstruction for farmer analytics and visualization
- Prototyped passive camera auto-calibration to streamline manufacturing and improve accuracy

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
- Achieved improvements in all tracking metrics for use in offline labeling (patent US-11782815-B2)

Integrated Control and Estimation Intern – Secret Security Clearance (Inactive)   **06/2020 to 08/2020**
Air Force Research Laboratory (Eglin AFB) - Dr. Adam Rutkowski

- 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

Robotics Intern: Motion Planning   **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

Skills

- Diffusion Models, Embodied AI, Imitation Learning
- NeRF, 3D Reconstruction, Computer Vision
- State Estimation, SLAM, Optimal Control
- Strong command of Python, C++, and Matlab
- Proficiency in CUDA, PyTorch, HTML/CSS/JS
- Full-Stack Roboticist, Embedded, Hardware, ROS

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