

Jerred L. Chen

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EDUCATION

Georgia Institute of Technology, Atlanta, GA	Expected Dec. 2022
- Mechanical Engineering BS track	GPA 3.88
- Computer Science BS track – Concentrations in Artificial Intelligence, Modeling and Simulations	
- <u>Relevant Coursework</u> : Differential Equations, Numerical Methods, Data Structures and Algorithms, Statistics, Intro to Artificial Intelligence, Computer Organization and Program, System Dynamics	
- <u>In progress</u> : Design and Analysis of Algorithms, Computing and Networks, Robotics and Perception	
- Victoria and Sherman Glass Scholarship – GT Houston Award	

WORK EXPERIENCE

NSF REU Trainee, Data Driven Computing REU at University of Houston	June 2020-Aug. 2020
- Received 2 nd best presentation for Using Anomaly Detection to Differentiate between Short and Long Chains	
- Developed cybersecurity algorithm detecting stepping-stone intruder chains	
- Designed a simulated user program to collect experimental data with 200% increased efficiency	
- Utilized Numpy, Pandas, Scikit-learn and Jupyter Notebook for analysis on data packets in SSH connections	

RESEARCH

Laboratory of Intelligent Decisions and Autonomous Robots, Undergraduate Researcher	Aug. 2019-Present
- Implemented RRT algorithm to perform path-planning and collision avoidance into KUKA arm simulation	
- Integrated OMPL into Drake software for the LIDAR Lab to use as reference	
- Improved functionality of upper-body robot with an object-oriented script for the motors	
- Tuned PID gains to reach critical damping for individual fingers of the upper-body robot	

PROJECTS

EyeWatch (in-progress)	Dec. 2020-Present
- Pauses video or movie when webcam detects user looking away from screen	
- Utilize OpenCV deep neural network model to perform facial detection	
- Designed data set of different facial angles to be used in training and validation	
- Integrate neural network model into real-time computer vision detection	
Simulated User Activity Program	June 2020-Aug. 2020
- Simulated multiple users typing simultaneously across several terminals for faster data collection	
- Implemented multithreading to represent each user's typing activity on an individual thread	
- Modeled pauses between keystrokes by sampling from probability distributions of human users' data	
- Designed program to automatically log data from each simulated user in a Pandas dataframe	

SKILLS

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- **Languages:** Experienced with Xpath, Bash, Assembly, C/C++; Proficient in Python, Java, MATLAB
 - **Robotics:** Proficient in Drake (simulation software), OMPL (motion planning)
 - **Data Science:** Proficient in Scrapy, Selenium, Numpy, Pandas, Matplotlib, Jupyter Notebook
 - **Version Control:** Git
 - **OS Systems:** Proficient with Linux (Ubuntu), Windows
 - **Hardware:** Wiring, Arduinos, motor drivers, linear actuators

LEADERSHIP/VOLUNTEER

TEALS Volunteer, Technology Education and Literacy in Schools Program	Jan. 2021-Present
- Co-taught along high school teacher introductory computer science concepts	
- Assisted high school students in learning basics of Python	
Resident Assistant, Georgia Tech Department of Housing and Residence Life	Aug. 2019-Present
- Served as veteran RA on staff to give other RA's advice in handling duty situations and aspects of the job	
- Collaborated with other RA's to maintain a sense of safety and community within the residence halls	
- Communicated policies, announcements, and event details to the residents on a weekly basis	
Sanctuary Choir Singer, Peachtree Christian Church	Sept. 2018-Present
- Performed with the Peachtree Church Choir every Sunday service	
- Led the tenor section during rehearsals, aided other singers with music and performances	