

Jerred L. Chen

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EDUCATION

Georgia Institute of Technology, Atlanta, GA

Expected Dec. 2022

GPA 3.88

- Mechanical Engineering BS track
- Computer Science BS track – Concentrations in Artificial Intelligence, Modeling and Simulations
- Relevant Coursework: Differential Equations, Numerical Methods, Data Structures and Algorithms, Statistics, Intro to Artificial Intelligence, Computer Organization and Program, System Dynamics
- In progress: 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 2nd 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

Manufacturing Systems Design Lab, Undergraduate Researcher

Aug. 2018-May 2019

- Co-author of Smart Elevator Design with Convolution Neural Networks
- Developed own simulations of industrial manufacturing systems through case studies

PROJECTS

EyeWatch (in-progress)

Dec. 2020-Present

- Pauses video or movie when webcam detects user looking away from screen
- Utilize FaceNet deep neural network model with Keras software to perform facial recognition
- Designed data set of different facial angles to be used in training and validation
- Integrate neural network model into real-time computer vision detection using Tensorflow

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

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

LEADERSHIP

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