Zhubo Zhou

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seeking software engineering internship/research opportunities in Summer/Fall 2022

Education

M.S. in Computer Science, University of Southern California Expected May 2024
- Analysis of Algorithms, Intro to Programming Systems Design

B.S. in Mechanical Engineering (Highest Honor), Georgia Institute of Technology Sept 2016-Dec 2020
- Minor in Robotics (minor GPA: 4.0) GPA: 3.7/4.0
- President's Undergraduate Research Award
- Object-Oriented Programming, Computing for Engineers, Machine Learning, Robotics, Control of Dynamic Systems

Skills

Programming Language: Java, C++, C, Python, MATLAB, Simulink
Other Skills & Software: Mechatronics (Arduino, MSP432), Linux, LabView, SolidWorks, ANSYS, Siemens NX, fast prototyping

Work & Research Experience

New Product Development Engineer | Signify (Philips Lighting), Atlanta, GA Feb 2021-Dec 2021
- Led development of next-gen LED modules to meet functional & space requirements, project deadline, and tooling budget
- Performed CAD review, mechanical analysis & prelim testing, created test plan, coordinated with internal & external team

Research Assistant | Adaptive Robotic Manipulation Lab, Atlanta, GA May 2019-Dec 2020
- **Multiscale Haptic Simulation:** Created CHAI3D (a haptic framework written in C++) and CoppeliaSim (a robot simulator) simulations to validate the framework for controlling 2 programs simultaneously using a haptic device
- **Synchronous Position Control of the Haptic Paddle Suite:** Prototyped an Arduino-based teleoperation suite (two force-feedback joysticks - main & sub), achieved robust real-time position control utilizing a PID controller & signal processing

R&D Engineering Co-op | Medshape, Atlanta, GA Jan 2019-Dec 2019
- Supported R&D department in design, analysis, testing, and manufacturing of next-gen orthopedic implants
- Designed & prototyped test fixtures & assembly fixtures; Optimized & validated new implant designs with FEA simulations

Shell Tutor for Computing Techniques | Georgia Institute of Technology, Atlanta, GA May 2018-Dec 2018
- Held weekly office hours to help students understand numerical methods and how to implement them using MATLAB

Projects

Automated Leak Sensor Assembling System for Rheem's Smart Water Heater Pan [Capstone] Fall 2020
- Developed a fully automated system to replace the original manual installation process, cut assembly time by 70%
- Responsible for control system design & implementation (C++), actuator selection, and structural analysis

Instrument Identification for Real-world Music Pieces [CS4641 Machine Learning] Summer 2020
- Applied supervised learning to identify instruments in the music, achieved a >90% accuracy for test music pieces
- Written in Python, extracted feature vectors using MFCC, and performed classification using SVM

Indoor Obstacle Avoidance Patrolling Vehicle [ME4405 Mechatronics] Spring 2020
- Built & programmed a smart robot car capable of avoiding obstacles autonomously via an MSP432 microcontroller (C++)

EcoCAR Mobility Challenge: Transform a Chevrolet Blazer into a Hybrid Vehicle Aug 2018-Dec 2019
Propulsion System Integration team & Propulsion Controls and Modeling team
- Implemented safety requirements (e.g., fault detection) for the supervisory controller via Simulink
- Ran FEA to validate modifications to the vehicle using Siemens NX; Simulated performance of radiators using an EES script

Robot Design Challenge [ME 2110 Creative Decisions and Design] Summer 2018
- Designed, built, and refined a robotic system capable of grasping and moving objects with 3 teammates
- Responsible for programming all the actuators and sensors using LabVIEW via an NI MyRIO microcontroller

Publication

Zhou Z, Zhang Y, Chen P, et al. "Graphene oxide-modified zinc anode for rechargeable aqueous batteries" (Chemical Engineering Science (2019) 142-147)