Zhubo (Kally) Zhou

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Education

Georgia Institute of Technology, *Atlanta, GA* ***08/2016 – 12/2020***

- B.S. in Mechanical Engineering (GPA: 3.7/4.0), minor in Robotics (minor GPA: 4.0)
- President's Undergraduate Research Award (Spring 2018)

Skills

Software: SolidWorks (CAD&CAE), Simulink, ANSYS, LabVIEW, Siemens NX (CAD&CAE)
Programming Language: MATLAB, Python, C++, C, Java, Engineering Equation Solver
Other Skills: Linux, Arduino, material testing, fast prototyping (3-D printer, CNC machine, lathe, mill)

Internship & Research

Research Assistant at Adaptive Robotic Manipulation Lab, *Atlanta, GA* ***05/2019 - 12/2020***

- **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 a teleoperation suite (consisting of two force-feedback joysticks - main & sub) and achieved real-time position control utilizing a PID controller

R&D Engineering Co-op at Medshape, *Atlanta, GA* ***01/2019 – 04/2019, 08/2019 – 12/2019***

- Designed and prototyped DynaScrew assembling system, test fixtures, etc. based on DFM principles
- Created protocols & ran tests (torsion, tensile, etc.) using Instron / load cell to validate implants for FDA submission
- Ran FEA simulation to optimize & validate designs using ANSYS Workbench / SolidWorks
- Programmed in Mastercam to machine fixtures using CNC and analyzed manufacturing defects (metal, PEEK, etc.)

Shell Tutor for ME courses, *Georgia Institute of Technology, Atlanta, GA* ***05/2018 – 12/2018***

Computing Techniques (understand and implement numerical methods using MATLAB) & Thermodynamics

Paid Undergraduate Researcher at Nian Liu's Lab, *Georgia Institute of Technology* ***08/2017 – 05/2018***

- Published a journal article as the first author on CES *(GO-modified Zn anode for rechargeable aqueous batteries)*
- Designed and validated a high-pressure chamber with 4 wire outlets to help visualize electrochemical testing

Projects

Capstone Design: Automated Leak Sensor Assembling System for Rheem's Smart Water Heater Pan ***Fall 2020***

- Developed an automation system that cut assembling time by 70% with 4 teammates
- Responsible for control system design & implementation, structural analysis, and Solidworks animations

CS4641 Machine Learning: Instrument Identification for Real-world Music Pieces ***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

ME4405 Mechatronics: Indoor Obstacle Avoidance Patrolling Vehicle ***Spring 2020***

- Built & programmed a robot car (1 ultrasonic sensor & 3 motors) to avoid obstacles via MSP432 microcontroller

EcoCAR Mobility Challenge: Transform a Chevrolet Blazer into A Hybrid Vehicle ***08/2018 – 12/2019***

Propulsion System Integration team & Propulsion Controls and Modeling team

- Designed a cooling loop for the M-G set to meet heat rejection & geometric requirements; simulated performance of radiators using an EES script; ran FEA to validate modifications to the vehicle using NX
- Implemented safety requirements (e.g., fault detection) for the supervisory controller via Simulink

ME 2110 Creative Decisions and Design: Robot Design Competition ***Summer 2018***

- Collaborated with 3 teammates to design and prototype a robotic system capable of grasping and moving objects
- Responsible for programming all the actuators and sensors using LabVIEW via an NI MyRIO controller

Leadership

Georgia Tech Chinese Students and Scholars Association, *Atlanta, GA* ***09/2017- 05/2018***

Vice President, Director of Publicity