Yingfen (Louise) Yi

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Enthusiastic ME master graduate with internship experience at Robotics company.

Designed and controlled a biomimetic mechatronic system and an automated guided car. Designed and prototyped wearable camera case and 3D printer. Experience with Solidworks, MATLAB, C and Python.

Education

Northwestern University, Evanston, IL — June 2019

Master of Science in Mechanical Engineering — Specialization in Robotics and Control — GPA: 4.0/4.0

Xi'an Jiaotong University, Shaanxi, China — June 2017

Bachelor of Science in Mechanical Engineering — Specialization in Mechatronics — GPA: 3.9/4.0

Skills

- Computing Skills: Solidworks, AutoCAD, Autodesk Inventor, MasterCAM, UG-NX; MATLAB, C, Python, ROS, Mathematica, Java; Git, Linux, SQL, EAGLE
- Industry Knowledge: Machine Learning, Data Analysis, Micro-controller (PIC32)
- Laboratory Skills: 3D printing, PCB design, wiring, CNC machining, laser cut

Work Experience

Songshan Lake Xbot Park, Guangdong, China — February 2017 – April 2017

Robotics Engineer

- Collaborated with another 5 professional engineers in different fields on massage robot development
- Designed a prototype of head massage robot based on spherical parallel manipulators with ***Solidworks*** and ***UG-NX***
- Aided in kinetic analysis and workspace configuration of the robot on ***MATLAB***
- Optimized parameters of the robot according to the analysis result with GA(genetic algorithm)

Projects

Object Texture and Shape Recognition with Bionic Whisker Sensor, Evanston, IL — April 2018 – Present

- Design a bionic electro-mechanical system with ***Solidworks*** to simulate rats' recognition behavior
- Construct the system hardware, including parts selecting, connectors ***3D printing*** and protoboard building
- Verify and calibrate the design to realize anticipated motion with DC motor and stepper, using ***Python*** and ***C***
- Conduct system troubleshooting and debugging to ensure automatic data acquisition
- Process and analyze the vibration signal from the sensor with ***MATLAB***

Case Design for Wearable Camera, Evanston, IL — June 2018 – February 2019

- Designed the case for wearable cameras specifically for health monitoring with ***Solidworks***
- Derived and prototyped 3 types of cases for different application scenarios, including brooch, gripper, and necklace
- Collaborated and communicated with a multidisciplinary team of more than 10 scientists to interpret product requirements and customize the case; reviewed and calibrated the design iteratively to improve user experience

Design and Control of Automated Guided Vehicle, Evanston, IL — April 2018 – June 2018

- Navigated the vehicle to move along marked trajectory with an onboard camera to perceive the environment
- Analyzed the real-time image from the camera and applied PI feedback control to calibrate the moving path automatically, using ***Java*** and ***C***
- Designed and constructed the core control circuit using ***EAGLE***
- Designed the structure of vehicle with ***Solidworks*** and built the hardware using ***3D printing*** and ***laser-cut***

Motion Planning and Simulation for Mobile Robot, Evanston, IL — Sep 2017 – Dec 2017

- Conducted kinematic analysis and calculated workspace for KUKA youBot, a 5-DOF serial manipulation arm with omnidirectional mobile platform
- Generated reference trajectory by applying PI velocity control with ***MATLAB*** and simulated the motion on ***V-REP***
- Optimized the gains of controller to reduce oscillation while retaining system stability