

Yingfen (Louise) Yi, MS

YingfenYi@gmail.com | (425)208-6199 | www.linkedin.com/in/yingfen-yi/ | <https://yingfenyi.github.io>

Enthusiastic, creative Mechatronics engineer with MS degree specialized in Mechatronics and Robotics. Internship experience at wearable device and Robotics companies. Research experience in robotics and wearable cameras. Controlled an automated guided car and conducted motion simulation. Experience with Solidworks, MATLAB, C and Python.

Education

<i>Northwestern University</i> , Evanston, IL		June 2019
Master of Science in Mechanical Engineering	Specialization in Robotics and Control	GPA: 4.0/4.0
<i>Xi'an Jiaotong University</i> , Shaanxi, China		June 2017
Bachelor of Science in Mechanical Engineering	Specialization in Mechatronics	GPA: 3.9/4.0

Skills

- Computing Skills: MATLAB, C, Python, Mathematica, ROS; Solidworks, AutoCAD, Autodesk Inventor, MasterCAM, UG-NX, SQL, EAGLE
- Industry Knowledge: Data Analysis, Machine Learning, Micro-controller (PIC32)
- Laboratory Skills: Prototyping, 3D printing, Laser-cut, Soldering, CNC machining

Experience

Microsensor Labs, Chicago, IL August 2019 – Present
Sensor Design Engineer Intern

- Design wearable sensor, as part of hand hygiene monitoring platform, to reduce healthcare-associated infections
- Test and modify the embedded system program written in *C* to improve the performance, involving Bluetooth Low Energy (*BLE*) for communication and *FreeRTOS* for task management
- Conduct Mechanical enclosure design with *Solidworks* and prototype with *3D printing*

SeNSE Group, Northwestern University, Evanston, IL April 2018 – July 2019
Research Assistant

- Designed a biomimetic Mechatronic system with *Solidworks* to extract object texture and shapes
- Constructed system hardware, including parts selection, design, *3D printing*, and protoboard building
- Calibrated the design to obtain desired motion trajectory with DC motor and stepper, using *Python* and *C*
- Conducted system troubleshooting and debugging to ensure automated data acquisition
- Processed and analyzed vibrations signal from the sensor with *MATLAB*

Songshan Lake Xbot Park, Guangdong, China February 2017 – April 2017
Robotics Engineer Intern

- Collaborated with five professional engineers in different fields to develop a massage robot
- Designed a prototype of head massage robot based on spherical parallel manipulators with *Solidworks* and *UG-NX*
- Conducted kinetic analysis, workspace configuration and parameter optimization for the robot on *MATLAB*

Projects

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