

# Shengdong Liu

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Fully authorized to work in the US.

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## **PROFESSIONAL EXPERIENCE**

### **Diagnologix, San Diego, CA**

May 2020 - Present

#### Software Development Engineer

- Prototyped control software using Python and ROS framework for Diagnologix's automated cell sorter.
- Created user interface using Kivy Library for biologists to operate the automated cell sorters.
- Wrote simple bash scripts to automate installation for custom software.
- Ported and translated C device driver code provided by electrical engineers into Python.
- Prototyped computer vision approach to count microbubbles using microscope images.
- Set up a local Git server for version control using Raspberry Pi 4 and Raspberry Pi OS.

### **SPAWAR, San Diego, CA**

Jun. - Sep. 2016, 2017

#### NREIP Intern (Software)

- Developed a prototype Python software using AIS messages to report anomalies in ship behavior.
- Integrated software with Class A/B AIS transponders to read and decode messages in real-time.
- Set up and calibrated stereo cameras to generate disparity maps in C++ for depth estimation.

### **CareFusion, San Diego, CA**

Oct. 2014 - Jun. 2016

#### Engineering Intern

- Created Use Cases for the Alaris Patient Controlled Analgesia (PCA) module.
- Reorganized and merged software documentations between multiple branches.

## **RESEARCH EXPERIENCE**

### **AUE (Autonomous Underwater Explorer) Localization**

Sep. 2016 - Jun. 2018

- Localizes AUE's to study small-scale ocean currents for studying the dynamics of planktonic communities and oil spill expansion.
- Created a simulated environment of AUEs and sound sources and implemented a direct computation technique and far-field approximation technique of estimating sound and AUE locations from time-difference-of-arrival data in Matlab.

### **MURO (Multi-Agent Robotics)**

Jan. 2015 - Jun. 2016

- Develop software in C++ to simulate car-like motion on a unicycle-type robot (Turtlebots) using Dubin's path algorithm and proportional-integral-derivative control.

## **EDUCATION**

University of California, San Diego

M.S. in Computer Science, (Incomplete)

Sep. 2016 - June. 2018, GPA: 3.55

University of California, San Diego

B.S. in Computer Science,

Sep. 2012 - June 2016, GPA: 3.50

## **SKILLS**

### **Programming Languages:**

- Proficient: Python 3
- Familiar: C++, Matlab, C, Java

### **Operating Systems:**

- Ubuntu Linux
- Raspberry Pi OS
- Windows 7/10/11

### **Tools/Libraries/Frameworks:**

- Git
- OpenCV Library
- Robotic Operating System (ROS)
- Adafruit Library
- Slack
- Trello