LUXI HUANG

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EDUCATION

Northwestern University (NU), Evanston,IL **Expected Dec.2020**
Master of Robotics

University of Maryland (UMD), College Park, MD **Dec.2018**
Bachelor of Science Mechanical Engineering; Mathematics

SKILLS

Primary Operating System: Linux
Robot Skills: ROS, Computer Vision, Machine Learning, Motion Planing, Microcontroller, Bayesian Filters, Version Control (Git), Search Algorithm
Programming Languagege: C/C++, Python, MATLAB/SimuLink
Mechanical Engineering: SolidWorks, ANSYS, EES, CNC, Laser Cutter, FEA, UG, Design Process
Data Analysis: SAS

SELECTED PROJECTS

Robot Navigation From Scratch on Turtlebot3 - NU **Jan. 2020 - March.2020**
- Developed 2D kinematics and navigation library in C++ for differential drive robots
- Wrote circular feature detection algorithm for LiDAR scanner and implemented a landmark-based EKF SLAM algorithm
- Implement Turtlebot3 navigation using ROS in C++ as the central platform.

ReThink Robot Build Lego - NU **Step. 2019 - Dec. 2019**
- Develop a system to control a Baxter (Rethink Robotics) to build Lego
- Programmed whole node on 7-DOF arm trajectory algorithm using ROS MoveIt (in Python) to accomplish motion planning and obstacle avoiding, and control the force on grippers

Quadrupedal Bio-inspired Robotics Project - UMD **Jan. 2018 - May 2018**
- Collaborated with a group of 3 students to design, build, and test quadrupedal bio-inspired newt robotics
- Analyzed gait and implement Inverse Kinematics to control robotic navigation in MATLAB on Arduino
- Created full technical drawing of robot components on Solidworks
- Designed and constructed circuitry for robotics

Internet Communicating Vehicles - UMD **Sept.2018 - Dec.2018**
- Designed, build, and assembly vehicles robot to communicate and motion control with internet or joysticks.
- Programmed in Python on Raspberry Pi Board to control actuators and robot motion.
- Generated dynamic web page for Pi communication and data transferring.

DeWALT DCF815 Impact Driver Project - UMD **Sept.2017 - Dec.2017**
- Collaborated with a group of 5 students to test, analyze, and write five reports of the DeWALT DCF815 impact driver among the dissection and benchmarking, speed, power, thermal, manufacturing aspect
- Designed a brushless motor to improve the performance of the DeWALT DCF815 impact driver
- Analyzed the material selection, and mechanical design of components for the DeWALT DCF815 impact driver
- Applied mathematical and statistical methods to interpret data and generate results from the experiment

WORK EXPERIENCE:

Research Assistant, The Sensor and Actuator Lab - UMD **Dec. 2017 - Dec.2018**
- Designed metamaterial sonar to strongly magnified acoustic signals
- Designed and built a wheel robotic to tracking moved barriers by sending and receiving acoustic signals through metamaterial sonar
- Created and printed 3-D components of robotic and metamaterial sonar.
- Code on Launch-F28379D DSP board in C to tracking barriers though sending and receiving acoustic signals with PID control.

MATLAB tutor - UMD **Feb. 2016 – May 2016**
- Tutored undergraduate students in MATLAB for calculus, differential equation, and linear algebra courses