

Muchen Sun

CONTACT INFORMATION	Department of Mechanical Engineering, Northwestern University, 2145 Sheridan Road, Evanston, IL 60208	(773) 313-5186 muchensun2021@u.northwestern.edu https://muchensun.github.io
EDUCATION	Northwestern University M.S. in Mechanical Engineering	EVANSTON, USA 2019.9 – Present
	Lanzhou University B.E. in Computer Science and Technology	GANSU, CHINA 2015.9 – 2019.6
RESEARCH EXPERIENCES	Autonomous Driving Research Group Group Member Supervisor: Qingguo Zhou, Dept of Computer Science and Technology, Lanzhou University, China	Lanzhou University, China 2018.10 – 2019.6
	<ul style="list-style-type: none">• Implemented a LIDAR-based road segmentation method^[1].• Bachelor's Thesis: Analysis of Applying Adaptive Thresholding Method in LiDAR-Based Road Edge Detection Task. (<i>Excellent Bachelor's Thesis, Advisor: Prof. Qingguo Zhou and Prof. Nicholas McGuire</i>)• Implemented a LIDAR-based mapping framework with normal distribution transforms(NDT) and sliding window strategy for road marking extraction.	
	StuPyd: Language For Programming Education Website: https://github.com/StuPyd/stupyd-lang Group Leader Supervisor: Hao Yan, Dept of Computer Science and Technology, Lanzhou University, China	Lanzhou University, China 2018.5 – 2018.11
	<ul style="list-style-type: none">• Designed and implemented part of the compiler parser with Python and Another Tool for Language Recognition(ANTLR).• Designed and implemented the back end of the compiler as a bytecode execution virtual machine.• Implemented a Jupyter Notebook kernel based on the compiler.	
PUBLICATION	[1] Zebang Shen, Yichong Xu, Muchen Sun, Alexander Carballo, Qingguo Zhou. 3D Map Optimization with Fully Convolutional Neural Network and Dynamic Local NDT. <i>IEEE International Conference on Intelligent Transportation Systems(ITS)</i> , Auckland, NZ, October 2019. In Press.	
SOFTWARE	ROS-Lab: Docker-Based Robot Operating System Virtual Lab Website: https://github.com/MuchenSun/ros-lab	
	<ul style="list-style-type: none">• Built a docker image to enable users to access Ubuntu desktop environment with Robot Operating System(ROS) in the web browser.• Implemented a REPL user interface to simplify Docker operations.	
	Robot Operating System Driver for the DeepCam Face Recognition API	
	<ul style="list-style-type: none">• Implemented a Robot Operating System(ROS) driver for the face recognition API of the DeepCam company.• Implemented a face scanner demonstration with this driver on the TurtleBot3 robot.	

EXTENDED
PROFESSIONAL
EXPERIENCE

University of California San Diego
University and Professional Studies Program
Visiting Student

SAN DIEGO, USA
2017.9 – 2017.12

HONORS AND
AWARDS

2016 – 2017 Second-class Scholarship of Lanzhou University
2015 – 2016 Second-class Scholarship of Lanzhou University

RELATED
COURSEWORK

<input type="checkbox"/> Data Structure	<input type="checkbox"/> Algorithm Design and Analysis
<input type="checkbox"/> The Design of C++ Program	<input type="checkbox"/> Operating Systems
<input type="checkbox"/> Digital Logic	<input type="checkbox"/> Electronic Circuit
<input type="checkbox"/> Calculus	<input type="checkbox"/> Linear Algebra
<input type="checkbox"/> Probability and Mathematical Statistics	<input type="checkbox"/> Numerical Analysis

TECHNICAL
STRENGTHS

Computer Languages:	Python, C++, MATLAB
Frameworks and Libraries:	ROS, PCL, OpenCV, Keras
Tools:	Make, Git, Docker, ANTLR