# Chenge Yang

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## EDUCATION

**Northwestern University**, Evanston, IL, United States — Sep 2018 – Dec 2019 (Expected)
M.S., Robotics

**The University of Manchester**, Manchester, United Kingdom — Sep 2016 – Dec 2017
M.S., Mechanical Engineering

**Peking University**, Beijing, China — Sep 2012 – Jul 2016
B.Eng., Engineering Mechanics

## PROJECT EXPERIENCE

**SLAM and Autonomous Navigation with Jackal UGV** — Jan 2019 – Present
Northwestern University, IL

- Set up Jackal UGV with Velodyne VLP-16 LIDAR, RGB camera and IMU
- Integrated packages in ROS to achieve SLAM and autonomous navigation with Lidar data
- Simulated the robot with Lidar in Gazebo and rviz
- Processing the Point Cloud data with PCL and C++
- Developing human detection and localization with VLP-16 LIDAR

**Robot Face Painter** — Oct 2018 – Dec 2018
Northwestern University, IL

- Located the drawing surface using AR tags and robot hand camera
- Detected human face and extracted the edge map with OpenCV
- Transferred edge map to Cartesian drawing points with Depth-First Search and edge following algorithms
- Implemented joint velocity controllers on Sawyer 7-DOF industrial robot arm to draw the face image on horizontal surface
- Integrated teammates' codes into ROS and created topics and services for communication between functions

**Electric Bike Drive System** — Sep 2016 – May 2017
The University of Manchester, Manchester, United Kingdom

- Designed an innovative two-speed gearbox in Solidworks and manufactured using CNC machine tool
- Developed and programmed an Arduino-based electronic unit to control and drive a brushless DC motor
- Integrated sensors, display and battery into the control system to achieve automatic gear shifting, torque and speed control under different drive modes

**Post-processing Algorithms of Ultrasonic Color Doppler Flow Imaging** — Feb 2016 – Jun 2016
Peking University, Beijing, China

- Developed and implemented a spatial-temporal filter based image post-processing algorithm on Color Doppler radio frequency data with C and Matlab
- Improved the visual recognition sensitivity of low-velocity blood flows in small vessels with satisfactory signal-to-noise ratio and computational complexity

## WORK EXPERIENCE

**BMW Group**, Beijing, China — Sep 2017 – Feb 2018
Intern, R&D department, Total Vehicle Benchmark & Product Strategy

- Conducted complete vehicle benchmark research of Chinese competitor vehicles
- Analyzed technology trend and prospect of automobile industry
- Developed and implemented company strategies in cooperation with relevant R&D departments (Electronics, Connected and Automated Driving Lab, etc.)

## SKILLS

Programming: Python, C/C++, Matlab, ROS, Git, Linux, OpenCV, PCL
CAD: Solidworks, AutoCAD, Ansys, LabView