YANG XUEHUAN (**Singapore Permanent Resident**)
Contact No: (+65) 9082 0388 | E-mail: s190113@e.ntu.edu.sg

EDUCATION

Nanyang Technological University (NTU), Singapore   **Jan 2020 - Jan 2024 (Estimate)**
Ph.D Candidate, School of Computer Science Engineering, Cyber Security Lab@NTU
- Research Interests: Autonomous Vehicle and Cyber Security
- Research Topics: Detecting Network Vulnerability with Deep Reinforcement Learning for Autonomous Vehicles

Nanyang Technological University (NTU), Singapore   **Aug 2016 - Dec 2019**
Bachelor of Engineering (Electrical and Electronic Engineering)
- Graduate one semester early with **Honours (Distinction)**
- Interests: Robotics Localization & Autonomous Vehicle Object Avoidance
- Modules (A+): (1) MH2810 Math I (2) PH1012 Physics I (3) EE2001 Circuit Analysis

COURSERA CERTIFICATE

Self Driving Cars Specification   **2019**
- Understand relevant hardware used for self-driving cars
- Identify main components of self-driving software and program vehicle modelling control
- Analyze the safety frameworks and current industry practices for vehicle development

Deep Learning Specification   **2019**
- Understand the major technology trends driving deep learning
- Be able to build,train and apply fully connected deep neural networks
- Understand the key parameters in a neural network's architecture

Applied Data Science With Python Specification   **2019**
- Visual basics data using the matplotlib library
- Create basic charts and realize design decisions in the framework
- Supervised approaches for creating predictive models will be described and would be able to apply scikit learn predictive methods while understanding process issues

Machine Learning with TensorFlow on Google Cloud Platform Specification   **2019**
- Identify why deep learning is currently popular
- Optimize and evaluate models using loss function and performance metrics
- Mitigate common problems that arise in machine learning
- Create scalable training, evaluation and test datasets.

RESEARCH EXPERIENCE

Centre for Cyber Security Research Centre @ NTU, Singapore   **Feb 2020 - Present**
Research Department, Research Assistant, Cyber Security Team
- Research Topics: Self-driving cars of deep learning systems in a wide variety of scenarios, especially in safety-critical applications
- Research Direction: It's crucial for building trust and reliability of AI systems in day-to-day decision making

Centre for Autonomous Robotics Research Lab,EEE,NTU,Singapore Jan 2019 - Dec 2019
Research Department, Autonomous Vehicle Localization Team
- **Individual Final Year Project**: Interfacing and Testing of Localization Sensors on An Autonomous Vehicle (FYP No: A1242-182)
- The project focuses on Safety and Cyber Security of driverless cars, in cooperation with Singapore Defense Science and Technology Agency (DSTA), ordered by Singapore ministry of defense (Future Systems & Technology Directorate FSTD)
- Success tested autonomous vehicle localization in CETRAN,Singapore
- Success collaborated Velodyne LIDAR & Delphi RADAR with existing software(ROS) and making necessary modifications with autonomous vehicle software (Autoware)
- Success applied Object Detection and Object Avoidance Algos for Toyota Coms Car
- Success tested the performance of Localization sensor in outdoor environment at different distances and reported the result of the observations

Center for Energy Research Institute@NTU, Singapore   Sep 2018 - Dec 2019
Research Department, Future Mobility Team
- Joined NTU-Volvo-LTA 12-meter autonomous electric bus team
- Tested NTU-JTC-Navya autonomous shuttle bus on NTU's campus
- Success developed lane detection algorithms for advanced driver assistance system
- Success acquired and analyzed 3D stereo camera (ZED) vision data using Nvidia CUDA
- Success integrated recognized obstacles using deep learning frame

WORK EXPERIENCE

SingPilot.AI, Singapore   Jun 2018 - Aug 2018
Software Engineer, R&D Department, Sensor Experts Team
- Join the team to supply and delivery of One unit of Autonomous Vehicle to Temasek Laboratories@Nanyang Technological University, Singapore
- Success customized ros_localization package for a driverless vehicle and navigation software to enable the vehicle to move autonomously using GPS, LIDAR and IMU
- Success built the height warning system using LIDAR for Changi Airport, Singapore

CO-CURRICULAR ACTIVITIES

Safety Officer, Main Committee, Inline Skating Club@NTU,Singapore Aug 2018 - Dec 2019
- Success taught basic safety skills for inline skating club skaters
- Success took care the sick or injured person during Inline skating lessons and activities
- Success prepared and analysed risk and management for training sessions and events

ACHIEVEMENTS - Professional Inline Skating Coach Under Sport Singapore
- Certificate: Singapore Coach Theory Level One by Sport Singapore
- Certificate: International Inline Certification Program (ICP) Level One
- Certificate: Basic Sports Science by Sport Singapore

SKILLS

- **Software Programming**: C (Advance), C++ (Intermediate), Python (Elementary)
- **Operating System**: Ubuntu (Advance), Windows (Intermediate), MacOS (Elementary)
- **Singapore Driving License**: Class 3
- **Math Skills:** 3rd Place, Chinese Mathematics Olympiad (CMO) Competition hosted by Chinese National High School Mathematics League