# Jiadai Sun

**E-mail:** changer@mail.nwpu.edu.cn **Tel:** (86) 15353508101 **Blog:** https://blog.sunjiadai.xyz

**Address:** NO.1 Dongxiang Road, Chang'an District, Xi'an Shaanxi, 710129, P.R.China.

## EDUCATIONAL BACKGROUND

**Northwestern Polytechnical University, China** *09/2016 - 06/2020*

***Bachelor of Engineering*, Computer Science and Technology** ***Overall Average*: 88.28/100 (*TOP 10%*)**

College Comprehensive Evaluation Ranking: **1/248** (*Including Score, Scientific research achievements, Competition, Social work*)

**Major Courses**: Data Structure and Algorithm, Computer Organization and Architecture, Computer Operating System, Database Concepts, Principle of Computer Network, Analysis of Signal and System, Natural Human Computer Interaction, Computer Graphics, Deep Learning in Computer Vision, GPU Parallel Programming

## RESEARCH INTERESTS

3D Visual Perception, Computer Vision, 3D Vision, Robotics, SLAM, Deep Learning, Autonomous Driving

## SKILLS & LANGUAGE

- **Programming Capability:** C/C++, Python, ROS, PCL, HTML, Java, MATLAB, SQL
- **CET-6 (461):** Listening: 118; Reading: 213; Writing and Translation: 130;

## SCIENTIFIC RESEARCH CONTEST

***Leader of Rescue Team* | NWPU Dancing Robot Research And Training Base** *07/2017 - present*

- **Research Topic: SLAM, Robot Localization and Navigation, Path Planning**
  In the Rescue Robot League, robots search for several victims placed in a simulated field of a disaster site and discover and rescue them. These robots have mechanisms for both operator control and autonomous operation. They are also equipped with devices such as a camera, a temperature sensor, and a carbon dioxide sensor.

  **Main Duties:** SLAM and Autonomous Navigation, using Lidar and Hector Slam or Cartographer algorithms, combined with projects based on some open source algorithms, then optimize and adapt them to our robots.

  **Video:** *Rescue Team Explorer - Result Presentation* *Autonomous Obstacle Avoidance Control Algorithms Show*

***Major Member* | NWPU Peak Experience Program Supervised By Prof. *Yuchao Dai*** *10/2018 - present*

- **Research Topic: Visual Technology of Unmanned System Based on Deep Learning**
  Lidar/Visual 3D Reconstruction, Deep ICP, Multi-sensor calibration, Visual SLAM such as ORB_SLAM etc.

  **Achievement:** Data acquisition and reconstruction of buildings using 3D Lidar and Cartographer has been implemented. Calibration of the extrinsic parameters between Camera and Lidar has been achieved.

  **Video:** *Velodyne-16+IMU+cartographer* *Dual Lidar Calibration*

***Junior Intern* | NWPU Center for Optical Imagery Analysis and Learning (OPTIMAL)** *12/2018 - present*

- **Research Topic: Unsupervised Learning Hash Encoding Schemes for Efficient Image Retrieval**
  Transform high-dimensional media data into compact binary codes and generate similar binary codes for similar data items, under the supervision of Dr. Zhanxuan Hu.

  **Main Duties:** Combine Unsupervised Clustering with Deep Hashing, Implementation based on Pytorch

***Group Leader & Programming Member* | NWPU Mathematical Modeling Base** *08/2017 - 03/2018*

- Won the Meritorious Winner International First Prize in 2018 MCM/ICM (Problem D: Out of Gas and Driving on Electric) and won the Provincial First Prize (CT system parameter calibration and imaging) in 2017 National Mathematical Modeling Competition.
- Invited to instruct the team of college to participate in the mathematical modeling competition organized by the school in May 2019.

**National University Student Innovation Training Program** *05/2018 - 04/2019*

***Group Leader &Software Engineer* | UAV Search and Rescue System Based on Infrared Thermal Imaging**

- Responsible for transmitting and processing the video captured by the UAV equipped with thermal imager/camera, combined with OpenCV and GPS to achieve rapid positioning of the trapped people in the coverage area. The team consists of five people, and we committed to developing a system to help the trapped people search and rescue after the disaster.

***Software Engineer* | Autonomous Obstacle Avoidance Patrol Vehicle Based on SLAM and Multi-sensor Fusion**

- Responsible for positioning, path planning and obstacle avoidance of inspection vehicles by using lidar and IMU. It also monitors and identifies fireworks, illegal intruders, toxic gases and dangerous goods in indoor environment (warehouse), and devotes itself to developing an intelligent system for warehouse monitoring.

## HONOR & AWARDS

**Outstanding Students** | Northwestern Polytechnical University (top 14.7%) *2016-2017*
**Outstanding Students** | Northwestern Polytechnical University (top 14.7%) *2017-2018*
**Wu Yajun's Special Scholarship** (third-class top 4.6%) *2016-2017*
**Aviation Industry Special Scholarship** (second-class top 2.0%) *2017-2018*
**International First Prize** | International University Interdisciplinary Contest in Modeling *02/2018*
**Silver Award** | RoboCup Rescue Robotic Tournament - Divisional Competition, Zhejiang *04/2018*
**Champion** | RoboCup Rescue, Divisional Competition-Independent Ability Challenge, Zhejiang *04/2018*
**Champion** | China Robot Competition - Environmental Autonomous Exploration Project, Sichuan *08/2018*
**First Prize** | Zhonghangzhi Technology Co., Ltd. "Lianfei Cup" Challenge Result Presentation *11/2018*
**First Prize** | National Undergraduate Mathematical Modeling Contest (Shaanxi Province) *09/2017*
**Second Prize** | The 11th National University Student Technology Contest on Energy-saving, Wuhan *08/2018*
**Third Prize** | National University Cloud Computing Application Innovation Competition, Nanjing *04/2018*
**Silver Award** | "Internet +" College Student Innovation and Entrepreneurship Competition, Shaanxi *10/2018*
**Silver Award** | The 11th "Creating Youth" College Entrepreneurship Competition, NWPU *04/2018*
**Excellent Project** | University Student Innovation and Entrepreneurship Training Program *2017-2018*
**Good Project** | University Student Innovation and Entrepreneurship Training Program *2017-2018*

## EXTRACURRICULAR ACTIVITIES

***Vice President* | Tencent Innovation Club** *10/2016 - present*

- 2016-2017, served as the leader of the WeChat team, and was awarded the best team of the year Responsible for providing technical services, such as club FTP server construction and maintenance, Photoshop training, poster production, video editing etc.
- 2017-2018, served as the director of the club's network advertising department, was awarded the outstanding member of the annual Tencent Innovation Club
- Achieved the first place **(1/21)** in the competition of college clubs affiliated to Tencent Inc in 2017

***Chief Propagandist & Technical Support* | Summer Social Practice Activities** *07/2017*

- Participated in the school-level summer social practice activities.
- Research Objective: the current situation and future prospects of Guangzhou's shared economy
- Responsible for advertising, filming and video editing

**Video:** *Summer Social Practice Team Records*

***Minister of Public Relations Department* | Computer Volunteer Service Team** *10/2016 - 10/2018*

- Provided computer maintenance service for students and teachers for free
- Connected community organizations to organize and arrange free computer maintenance activities