

# GUITAO LIU

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<https://gtliu.com>

## EDUCATION

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### UNIVERSITY OF OTTAWA

Master of Engineering in Electrical and Computer Engineering

- Expected graduation date: April, 2023

Ottawa, Canada

09/2021 – present

### XI'AN JIAOTONG UNIVERSITY (MEMBER OF C9 LEAGUE UNIVERSITIES IN CHINA)

Bachelor of Engineering (with honors) in Automation

- Cumulative GPA: 3.96/4.3, 91.35/100
- Graduation Project Grade: A+

Xi'an, China

09/2017 – 06/2021

### THE UNIVERSITY OF BRITISH COLUMBIA

Summer school

- B+ in *Building Modern Web Application*, A in *Algorithms and the World Wide Web*

Vancouver, Canada

07/2019 – 08/2019

## PROJECTS AND CONTEST EXPERIENCE

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### Energy dispenser system written in Electron and React

Graduation Project, supervisor: Prof. Jingjing Huang

- Developed a multi-communication protocol integrated energy dispatching desktop application with Electron, React and Chakra-UI, and built CI/CD with GitHub Actions.
- Designed deconstructed multi-layer application architecture, specified inter-layer data transfer standards, and wrapped communication protocol interfaces in the field of energy devices with FFI and vanilla JS.
- Implement other features such as dark mode, persistent storage, preference settings, etc.

Xi'an, China

01/2021 – 06/2021

### Automated Vehicles based on Raspberry Pi and OpenCV

Solely responsible for the curriculum design

- Implemented autopilot, automatic obstacle avoidance and Bluetooth controlling using OpenCV and Python on the Raspberry Pi 3 platform.
- Display video stream vehicle real-time data with Flask framework on a single web page.
- Check and format the code with Black, Flake8, isort via pre-commit.

Xi'an, China

10/2020 – 12/2020

### Multi-Robot Exploration Simulator

Course Project

- Designed a multi-robot simulation program in Python based on the Tkinter framework for unknown area exploration using improved market auction rules.
- Proposed a pathfinding algorithm for a single robot to identify obstacles, while also being able to simultaneously share exploration data with other robots in the local area.

Xi'an, China

03/2020 – 05/2020

### Ministry of Education Key Lab for Intelligent Networks and Network Security

Research Assistant, supervisor: Prof. Yadong Zhou

- Constructed backend applications using Flask framework to provide data visualization for millions of user dataset.
- Implemented RESTful API design and standard test cases in Python with standardized documentation.
- Established and maintained MySQL database with a scalable data structure.
- Deployed a Docker-based Elasticsearch cluster for the lab and performed a full-text search of the user dataset.

Xi'an, China

12/2019 – 06/2020

### Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM)

Head of the team

- Constructed two mathematical models for the faulty and non-faulty cases under the competition topic.
- Designed dynamic scheduling strategies for smart RGVs, using MATLAB simulation to obtain the RGV scheduling strategy results.
- Completed the writing of the main competition paper, *Dynamic Scheduling Model for RGV*.
- Organized and allocated the tasks for the team as team leader.
- Won the first prize of Shaanxi province.

Xi'an, China

07/2018 – 08/2018

## SOCIAL ACTIVITIES

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### Campus Advocacy Ambassadors at Xi'an Jiaotong University

- Organized activities to promote Xi'an Jiaotong University in my hometown high school.
- Facilitated online rallies to help high school graduates choose universities and majors.
- Provided freshmen guidance on university life and academic orientations.

Xi'an, China

**AWARDS**

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- Honorary Graduate of Qian Xuesen College 2021
- Panasonic Education Fund Scholarship 2018
- First Prize - Provincial level in Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM) 2018
- First Prize - Social Practice Activity of the Honors Engineering Program (Qian Xuesen Class) 2018
- The 3rd class scholarship for 2 consecutive years
- Excellent student of Xi'an Jiaotong University for 3 consecutive years

**SKILLS**

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- Python, MATLAB, SQL, Linux, Flask, Git Very skilled
- JavaScript, Nodejs, Golang Relatively skilled
- ReactJS, Cloud, Golang Generally familiar