

Yi Qin

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South China University of Technology
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EDUCATION

South China University of Technology (SCUT)

Sep 2019 - Jun 2023

Automation Bachelor School of Automation Science & Engineering

Guangzhou

GPA: 3.79/4.00 (6.4%) | The First Prize of School Donation Scholarship (2021) | English Ability: IELTS Band 8 | CET6 603/710

Courses taken:

Calculus(96) Probability & Mathematical Statistics(96) Complex Variable(100) Integral Transformation(94)

Data Structure And Algorithms(93) Artificial Intelligence(93) Image Processing and Machine Vision(91), etc.

RESEARCH EXPERIENCE

HKUST Research Internship

Apr 2022 - Present

Research Intern Department of Electronic and Computer Engineering

- Supervised by Prof. Xiaomeng LI.
- Research field: Disease Prognosis Prediction; Federated Learning; Semi-Supervised Learning; Medical Image Analysis.
- Participation in the project: multi-CT based survival prediction of the NSCLC patients.

SCUT Robot Lab - China University Robot Competition RoboMaster Competition

Nov 2020 - Sep 2022

Consultant (2021-2022) | Chief Developer (2020-2021) Vision Group

- In-depth development of a Real-time Intelligent Multi-Robot Dispatch System utilizing Object Detection & Tracking, Binocular Camera & Lidar (Sponsored by Ouster, Inc.), and Behavior Tree with UI in QT.
- In-depth implementation of real-time CPU inference of digit classification under low exposure & difficult occasions using ONNXRuntime & Pytorch.
- Co-Management for SimulatorX - a simulator for the RoboMaster Competition series using Unity.
- **RoboMaster 2021 University Championship - Bronze I Best Strategy Award**
- **RoboMaster 2022 University Championship (Central Region) - Silver**
- **ICRA & RoboMaster 2021 AI Challenge - Third Prize**
- **Patent:** An Intelligent 3D Perception Dispatch System. (CN) (Under Review) [First Author]

Biomedical Image Analysis in Multi-Organs Segmentation

Sep 2021 - Apr 2022

Chief Developer

- Funded by National College Students' Innovation and Entrepreneurship Training Program.
- Proposed a CNN & Transformer based hybrid 3D segmentation network.
- Implementation of Mixed Reality based surgical preview system.
- **Guangdong Biomedical Engineering Creative Design Competition: Precise OAR Segmentation for Nasopharyngeal Carcinoma - Silver**

Industrial Cyber-Physical System in Express Parcel Segmentation

Sep 2021 - Apr 2022

Chief Developer

- Funded by National College Students' Innovation and Entrepreneurship Training Program.
- In-depth development of real-time semantic segmentation using lightweight neural network inference or depth image retrieved from RGBD camera.
- Applied lightweight Transformer based segmentation network to the parcel sorting system.
- **Patent:** An Semantic Segmentation based Express Parcel Sorting System. (CN) (Under Review) [First Author]

PROJECT EXPERIENCE

DJI's Interactive Computer Vision Art Installation - 'The Blade Wall'

Sep 2021 - Present

Team Leader

- Actively cooperated with DJI Innovation to create an installation that uses gesture detection to control multiple motors attached to drone blades, with the purpose to form different patterns to attract consumers.

- Developed a product line consisting of the main product, maintenance tools, and design tools from scratch. Implemented with C#, Unity, C++, WX MiniProgram.
- **Patent:** A Gesture Control Based Multi-Motor Control Platform. (CN) (Under Review) [First Author]
- **Patent:** A Multi-Motor Control Device Driver. (CN) (Under Review) [Second Author]
- **Product has been installed in DJI Hasselblad Mixed Flagship Store, Nanjing.**

HoloCubic - Term Project for Microcontroller Design

Dec 2021 - Feb 2022

Individual Developer

- Extended the open-source project that produces a smart desktop device that contains functions including showing time, weather, pictures, and videos using ESP32.
- Marked 95/100

Human-Object Interaction Recognition

Oct 2021 - Feb 2022

Chief Developer

- Proposed an architecture that defines the human-object interaction in three phases: Subject - recognizing users, Verb - recognizing movements using pose classification, and Object - recognizing objects using light-weighted YOLOX.

Face Recognition With Occlusion - Term Project for Pattern Recognition

- Explored multiple ways to recognize faces with occlusion with cropped PCA analysis, image hash encoding, GANs, and YOLOX detection.
- Marked 95/100.

EXTRACURRICULAR ACTIVITIES

SCUT's Technological Winter Camp

Jan 2021

Teaching Assistant

- Actively assisted the smooth interaction between professors and high school students, and cooperated with other TAs for successful progress management.
- Recognized as Outstanding Teaching Assistant.

SCUT Robot Club

Jun 2020 - Jan 2022

Vice President(2021-2022) | Group Leader(2020-2021) Vision Group

- Successfully hosted a college-wide Robot Competition with other committee members.
- Cultivated a platform for all robot lovers and all students who wanted to get knowledge of computer vision, machine learning, and all essentials for robotics.

TED Talk Translation Project - Official

Individual Contributor

- Published translation: *Why we get mad -- and why it's healthy* by Ryan Martin (101K Likes)

SKILLS LIST

Machine Learning & Inference

- OS: Linux (Server with multi GPUs & Desktop) (Proficient)
- Framework: Pytorch (Proficient) | MONAI (Skilled)
- Image Processing: OpenCV (Proficient)
- Inference: Opencvino (Skilled) | ONNXRuntime (Skilled) | CUDA + TensorRT (Skilled)
- ROS (Basic)

Hardware Development

- Nvidia Jetson Xavier NX | Raspberry PI 4+ & Zero 2W | ESP32

Coding

- C++ (Proficient) | Python (Skilled) | C# (Experienced) | Javascript + Html (Experienced) | WeiXin MiniProgram (Experienced) | LaTeX (Skilled) | MatLab (Skilled)