Yangjie **XU**

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Education

Université du Luxembourg — *Kirchberg, Luxembourg*
Ph.D. Candidate — *Jul. 2021 — present*
- Main Topic: Quantum Machine Learning, Deep Learning, Graph Neural Network

I.M. Sechenov First Moscow State Medical University — *Moscow, Russia*
Exchange Internship — *Dec. 2018 — Jan. 2019*
- Main Courses : Supercomputing & Kinematic

Unverity of Chinese Academy of Sciences (SIAT, CAS) — *Shenzhen, China*
MEng in Computer Technology — *Sep. 2017 - Jun. 2020*
- Main Courses: Computer Vision and Deep Learning, Quantum Simulating, Data Mining, Cloud Computing

Jiangxi University of Science and Technology (JXUST) — *JiangXi, China*
BEng in Automation — *Sep. 2012 — Jun. 2016*
- Main Topic: Principle of Automation Control, Embedded System

Working Experience

Quantum Machin Learning — *Kirchberg, Luxembourg*
Primary Key Member — *Jun. 2023 - present*
- Quantum Machine Learning on Cropland Classification
- Quantum Walk on General Graph
- Hybrid Quantum-Classical Neural Networks on Yield Prediction

Early Warning System (University, Kerry, and Google) — *Kirchberg, Luxembourg*
Key Member — *Dec. 2021 - ,Jun. 20223*
- Monitoring crop development using hyperspectral satellite images.
- Evaluate the target crops' environmental conditions and growing status.
- Predict future market prices of target crops.

NIR Watch Dog (University and Ferrero) — *Kirchberg, Luxembourg*
Key Member — *Jul. 2021 - Dec. 2021*
- The near-infrared scanner examines the outer packaging.
- Distinguish the authenticity of goods.
- Cross domain analysis.

Quantum Simulation — *Shenzhen, China*
Primary Key Member — *Oct. 2019 - Feb. 2020*
- Learned some essential knowledge in quantum probability and tried to understand the concept of quantum neural network.
- Achieved quantum logic gates simulation in programming language C/C++. Keen to realize quantum neural network which is based on the quantum simulation in classic computer.
- The entire code implementation is available online.

Point Clouds — *Shenzhen, China*
Primary Key Member — *Oct. 2018 - Oct. 2019*
- Calibrated the internal and external parameters of the camera in binocular camera project based on OpenCV and got the information in the world coordinates (depth information).
- Learned skills of data analysis and various attribute characteristics of point cloud data.
- A deep neural network (SPSN: Seed Point Selection Network) for processing point clouds is designed to deal with point cloud instance segmentation.
- A general-purpose network that can be grafted to other basic networks to improve performance.

Auto Deep Learning — *Shenzhen, China*
Student Research Assistant — *Apr. 2018 - Oct. 2018*
- Study on deep learning and reinforcement learning.
- Took a comprehensive understanding of NAS(Neural Architecture Search) and implementing NAS based on reinforcement learning.
- Automatically Learn Cost-constrained Convolutional Neural Network Architectures with Reinforcement Learning.

Glasses Polishing Robot *Shenzhen, China*

Key Memmber *Sep. 2017 - Mar. 2018*

- Designed the hardware circuit of industrial robot, including the control circuit of servo motor.
- Designed software and debugged multi-axis linkage of glasses polishing robot based on MFC.

Embeded System *Jiangxi, China*

Laboratory intern *Sep. 2015 - June. 2016*

- Designed car collision prevention system based on ultrasonic sensor(graduatation project)
- Designed temperature control system based on PID technology(Engineering design)

Skills

Programming Python, C/C++, LaTeX, Matlab
English CET(College English Test)-6

Honors & Awards

International

2019 **Outstanding Student**, Russian-Chinese School on Biomedical Engineering and Mathematical Modeling *Moscow, Russia*
2018 **22nd Place**, Hard Hat Detection in Kaggle *Online*

Domestic

2018 **Merit Student**, Top 5% in Shenzhen Institute of Advanced Technology,Chinese Academy of Sciences *Shenzhen,China*
2013 **1st-class scholarship** , Top 5% in JXUST *Jiangxi, China*
2014 **2nd-class scholarship** , 15% in JXUST *Jiangxi, China*
2015 **2nd-class scholarship** , 15% in JXUST *Jiangxi, China*
2015 **2nd Award**, Competition of Electronic Design in Jiangxi,China *Jiangxi,China*
2014 **3rd Place**, University Competition of Mathematical Modeling *Jiangxi, China*
2014 **3rd Award**, Programming Language C Competition *Jiangxi, China*

Publication

Journals & Conferences *Kirchberg,Luxembourg*

Sep. 2021 - Present

- NIRWatchdog: Cross-Domain Product Quality Assessment Using Miniaturized Near-Infrared Sensors (IEEE Internet of Things Journal for Possible Publication) (2nd Author)
- **Xu, Yangjie**, Hui Huang, and Radu State. "CTQW-GraphSAGE: Trainabel Continuous-Time Quantum Walk On Graph." International Conference on Artificial Neural Networks. Cham: Springer Nature Switzerland, 2024
- **Xu, Yangjie**, Hui Huang, and Radu State. "Cropland Quantum Learning: A Hybrid Quantum-Classical Neural Network for Cropland Classification." 2024 IEEE 3rd International Conference on Computing and Machine Intelligence (ICMI). IEEE, 2024.

Journals & Conferences *Shenzhen,China*

sep. 2018 - Mar. 2020

- Fei Sun, **Yangjie Xu*** and Weidong Sun, "SPSN: Seed Point Selection Network in Point Cloud Instance Segmentation," 2020 International Joint Conference on Neural Networks (IJCNN), Glasgow, United Kingdom, 2020, pp. 1-8, doi: 10.1109/IJCNN48605.2020.9206908
- Bing He, Zhifeng Xu*, **Yangjie Xu**, Jinxing Hu and Zhanwu Ma, " Integrating semantic zoning information with the prediction of road link speed based on taxi GPS data," Complexity, 2020. Accepted
- Kai Xu, Zhile Yang, **Yangjie Xu** and Liangbing Feng*. "A Novel Interactive Fusion Method with Images and Point Clouds for 3D Object Detection," Applied Sciences. 2019, 9, 1065, doi: 10.3390/app9061065
- Qiang Xu, **Yangjie Xu**, Yulin Jiang and Yong Zhang. "Automatically design cost-constrained convolutional neural network architectures with reinforcement learning". Journal of Integration Technology, 2019 (3): 42-54
- Kai Xu, Zhile Yang, **Yangjie Xu** and Liangbing Feng*, "Residual Blocks PointNet: A novel faster PointNet framework for segmentation and estimated pose," 2018 5th IEEE International Conference on Cloud Computing and Intelligence Systems (CCIS), Nanjing, China, 2018, pp. 446-450, doi: 10.1109/CCIS.2018.8691349.

Patent *Shenzhen, China*

Sep. 2020

- **Xu Yangjie**, Zhang Yong, Vicent Chau. A 3D point cloud instance segmentation method. Application number: **CN201911289830.X**(In Chinese)