Jiaqiang Zhang

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Education

09.2017–
07.2020
Master of Science in Circuits and Systems,
The Shanghai Institute of Technical Physics of the Chinese Academy of Sciences, Shanghai, P.R. China
Supervisor: Professor Fansheng Chen.
Thesis Titile: *Cloud Detection of Remote Sensing Images based on Deep Learning(in Chinese).*

09.2013–
06.2017
Bachelor of Science in Applied Physics,
School of Physics, Nankai University, Tianjin, P.R. China

Research Experience

05.2022–
Present
Doctoral Researcher, *Turku Intelligent Embedded and Robotic Systems (TIERS) Lab, University of Turku, Finland*,
Supervisor: Professor Tomi Westerlund
- Researching on Container-Based cloud-fog-edge collaborative autonomy stack for multi-robot system under the funding from the project R3Swarms.
- Teaching Assistant of master course: Hardware Acceleration In AI, System Modelling and Synthesis with HDL.

09.2018–
07.2020
Research Assistant, *The Shanghai Institute of Technical Physics of the Chinese Academy of Sciences*,
- Proposed an improved U-Net based on residual network which can achieve the pixel-wise segmentation of cloud in remote sensing images.
- Proposed a lightweight cloud detection model based on depthwise separable convolution in order to reduce the model size and computation cost of pixel-wise cloud detection methods.

Work Experience

07.2020–
03.2022
Software Developer, *Data Center, Agricultural Bank of China*, Shanghai
- Developed CPU utilization rate prediction algorithm based on fbprophet and deployed the algorithm with Docker.
- Participated in the development of the warning platform and developed emergency SMS module.

03.2019–
05.2019
AI Intern, *IoT Solution Team, NXP Semiconductors*, Shanghai
- Developed face detection algorithm based on MTCNN.

Skills

Programming Languages	*Python, Java, JavaScript, Shell.*
Frameworks and Tools	*ROS 2, K8S, Docker, PyTorch, SpringBoot, React, Git, LATEX.*
Language Skills	*Chinese (Native), English (B2).*

Conference and Workshop

<table>
<tr><td>12.2022</td><td>The Seventh International Conference on Fog and Mobile Edge Computing (FMEC 2022), IEEE France Section, Paris, France
Oral Presentation: Distributed robotic systems in the edge-cloud continuum with ros 2: a review on novel architectures and technology readiness</td></tr>
<tr><td>11.2019</td><td>The 1st China Digital Earth Conference, International Society for Digital Earth, Beijing, P.R. China
Oral Presentation: Cloud Detection for Landsat8 Images based on U-Net</td></tr>
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Publications

1. **Jiaqiang Zhang**, Xianjia Yu, Sier Ha, Jorge Pena Queralta, Tomi Westerlund, *Comparison of DDS, MQTT, and Zenoh in Edge-to-Edge and Edge-to-Cloud Communication for Distributed ROS 2 Systems*, arXiv preprint (Under revision in the Journal of Intelligent & Robotic Systems) (2023).

2. **Zhang, J.**, Keramat, F., Yu, X., Hernández, D. M., Queralta, J. P., Westerlund, T. (2022, December). *Distributed robotic systems in the edge-cloud continuum with ros 2: a review on novel architectures and technology readiness.* In 2022 Seventh **International Conference on Fog and Mobile Edge Computing (FMEC)** (pp. 1-8). IEEE.

3. **Zhang, J.**, Li, X., Li, L. et al. *Lightweight U-Net for Cloud Detection of Visible and Thermal Infrared Remote Sensing Images.* **Opt Quant Electron** 52, 397 (2020).

4. **Zhang, J.**, Li, X., Li, L. et al. *Landsat 8 Remote Sensing Image Based on Deep Residual Fully Convolutional Network.* **Laser & Optoelectronics Progress**, 2020, 57(10): 102801 (in Chinese)