

# Titinunt Kitrungrotsakul

Nationality: Thai | Hangzhou, China | Mobile: +86 178 1570 8265 | Email: titinunt121@hotmail.com  
Website: kitrungrotsakul.com | LinkedIn: linkedin.com/in/titinunt-kitrungrotsakul-040444191/

---

## SUMMARY

---

AI expert and machine learning scientist with 15+ years of experience across AI research, model development, and software engineering. Led teams for 5+ years on healthcare and remote-sensing projects (>30M RMB). Lead author of 15+ publications (200+ citations). Expertise: VLM/LLM, knowledge distillation, federated learning, remote sensing, medical imaging.

## PROFESSIONAL SKILLS

---

- Machine Learning & AI: knowledge distillation, foundation models, LLM (LLaMA, LLaVA), VLM/CLIP; supervised/unsupervised learning; weak supervision; federated learning; deep learning; classical ML (SVM, random forest, Naive Bayes, regression/LASSO, k-means); computer vision; recommender systems.
- Business Applications: AI-driven customer analytics and operational optimization.
- Software Development: PyTorch, Gradio, Django, GCP, AWS, Git; C/C++ and Python development.

## EXPERIENCE

---

### Zhejiang Lab (之江实验室), Hangzhou, China — Senior Scientist / Researcher | 2019–Present

Lead design and deployment of AI solutions for large-scale healthcare and satellite/remote-sensing systems; improve operational efficiency and predictive accuracy.

*Selected work:*

- Train, analyze, and evaluate Florence2-based vision-language models for remote sensing: detection, segmentation, classification, captioning, and VQA.
- Build large-scale training pipelines on A100 GPU clusters (40 GPUs); oversee dataset creation/annotation; evaluate models and deliver Gradio demos.
- Design federated learning pipelines for CT/MRI liver analysis with Zhejiang University and Sir Run Run Shaw Hospital; integrate foundation models into hospital EDA systems.
- Federated learning model for a medical EDA system used in Hangzhou during the Asian Games.
- COVID-19 screening/prediction platform deployed across public hospitals in Hangzhou (>90% accuracy).
- Medical imaging algorithms for a Medical AI System in collaboration with Shao Yifu Hospital clinicians.

### Institute for Infocomm Research (I2R, A\*STAR), Singapore — Attachment Researcher | 2016–2019

Japan–Singapore–China collaboration on microscopy image processing for detecting, tracking, and classifying cell movement.

- Developed detection algorithms to identify normal and abnormal cells in 4D data (3D images over time).
- Proposed a multi-GPU training method for large datasets, reducing computation time by ~50% versus baseline approaches.
- Built visualization tools for analyzing cell movement.

### Ritsumeikan University, Japan — Researcher | 2013–2016

- Researched liver segmentation using graph-based ML and deep learning approaches.
- Advised and mentored students on medical image processing methods.

### Freelance Software Developer, Thailand | 2010–2013

- dtac: Developed backend infrastructure and led a team building an Android application platform.
- Boon Rawd Brewery (Singha): Led end-to-end mobile and backend development for the company's mobile app.

## PROJECTS

---

- National Science Foundation of China Youth Science Fund (China), 2023–2025.
- China Postdoctoral Science Foundation (China), Grant No. 2020M671826, 2020–2022.
- Special Young Researcher, Zhejiang Lab (China), Grant No. 2020ND0AA01, 2020–2021.
- JSPS Research Fellowship for Young Scientists (DC1, Japan), Grant No. 16J09596, 2016–2019.

## EDUCATION

---

### ***Ritsumeikan University, Japan***

- Doctor of Engineering, Graduate School of Information Science and Engineering, 2016–2019 (GPA 4.0/4.0).
- Master of Engineering, Graduate School of Information Science and Engineering, 2013–2015 (GPA 3.83/4.0).
- Best Student Paper Award (SPIE Medical Imaging 2017) + Scholarships: JSPS DC1; A\*STAR ARAP; Special Encouragement; Monbukagakusho Honors.

### ***Assumption University, Thailand***

- B.Sc. in Science and Technology, 2009–2012 (GPA 3.2/4.0).
- Best Multipoint Award, Microsoft Imagine Cup Thailand.

## TITLES

---

- Associate Research Professor, Zhejiang Lab (issued by Government of Zhejiang, China), 2024.
- Assistant Research Professor, Zhejiang Lab (issued by Government of Zhejiang, China), 2020.

## PUBLICATIONS (SELECTED)

---

### ***Journal articles***

- Kitrungrotsakul, T.; Xu, Y.; Srichola, P. Knowledge Distillation Meets Reinforcement Learning: A Cluster-Driven Approach to Image Processing. *Sensors* 2026, 26(1), 209. <https://doi.org/10.3390/s26010209>
- Kitrungrotsakul, T.; Srichola, P. Hierarchical Knowledge Distillation for Efficient Model Compression and Transfer: A Multi-Level Aggregation Approach. *Information* 2026, 17(1), 70. <https://doi.org/10.3390/info17010070>
- Kitrungrotsakul, T.; Wu, H.; Iwamoto, Y.; et al. Attention-RefNet: Interactive Attention Refinement Network for Infected Area Segmentation of COVID-19. *IEEE Journal of Biomedical and Health Informatics*, 2021.
- Kitrungrotsakul, T.; Iwamoto, Y.; Takemoto, S.; et al. Accurate and Fast Mitotic Detection Using an Anchor-Free Method Based on Full-Scale Connection with Recurrent Deep Layer Aggregation in 4D Microscopy Images. *BMC Bioinformatics*, 2021.
- Kitrungrotsakul, T.; Han, X.-H.; Iwamoto, Y.; et al. An End-to-End CNN and LSTM Network with 3D Anchors for Mitotic Cell Detection in 4D Microscopic Images and Its Parallel Implementation on Multiple GPUs. *Neural Computing and Applications*, 2019.
- Kitrungrotsakul, T.; Han, X.-H.; Iwamoto, Y.; et al. A Cascade of 2.5D CNN and Bidirectional CLSTM Network for Mitotic Cell Detection in 4D Microscopy Image. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2019.
- Kitrungrotsakul, T.; Han, X.-H.; Iwamoto, Y.; et al. VesselNet: A Deep Convolutional Neural Network with Multi-Pathways for Robust Hepatic Vessel Segmentation. *Computerized Medical Imaging and Graphics* 2019, 75, 74–83.
- Kitrungrotsakul, T.; Dong, C.; Tateyama, T.; Han, X.-H.; Chen, Y.-W. Interactive Segmentation and Visualization System for Medical Images on Mobile Devices. *Journal of Advanced Simulation in Science and Engineering* 2015, 2(1), 96–107.

### ***Conference proceedings / book chapters***

- Kitrungrotsakul, T.; Xu, Y.; Chen, Q.; et al. MSPA-DLA++: A Multi-Scale Phase Attention Deep Layer Aggregation for Lesion Detection in Multi-Phase CT Images. *MedInfo*, 2023.
- Kitrungrotsakul, T.; Wu, H.; Hu, H.; et al. A Hybrid Model of Deep Learning Features and Clinical Features for Severe Case Prediction of COVID-19. *Proc. SPIE*, 2023. <https://doi.org/10.1117/12.2655213>
- Kitrungrotsakul, T.; Xu, Y.; Hu, J.; et al. Deep Liver Lesion AI System: A Liver Lesion Diagnostic System Using Deep Learning in Multiphase CT. *Innovation in Medicine and Healthcare (Proc. 10th KES-InMed)*, 2022. [https://doi.org/10.1007/978-981-19-3440-7\\_22](https://doi.org/10.1007/978-981-19-3440-7_22)
- Kitrungrotsakul, T.; Iwamoto, Y.; Han, X.-H.; et al. A Cascade of CNN and LSTM Network with 3D Anchors for Mitotic Cell Detection in 4D Microscopic Image. *ICASSP*, 2019.
- Kitrungrotsakul, T.; Han, X.-H.; Iwamoto, Y.; et al. A 2.5D Cascaded Convolutional Neural Network with Temporal Information for Automatic Mitotic Cell Detection in 4D Microscopic Images. *ICNC-FSKD*, 2018.
- Kitrungrotsakul, T.; Iwamoto, Y.; Han, X.-H.; et al. Interactive Liver Segmentation in CT Volumes Using Fully Convolutional Networks. *IIMSS-18*, Springer, 2018, pp. 216–222.
- Kitrungrotsakul, T.; Han, X.-H.; Iwamoto, Y.; et al. Multi-Pathways CNN for Robust Vascular Segmentation. *Proc. SPIE Medical Imaging*, 2018.
- Kitrungrotsakul, T.; Han, X.-H.; Iwamoto, Y.; Chen, Y.-W. Automatic and Robust Vessel Segmentation in CT Volumes Using Submodular Constrained Graph. *Innovation in Medicine and Healthcare 2017*, Springer, pp. 57–66.
- Kitrungrotsakul, T.; Han, X.-H.; Iwamoto, Y.; et al. Robust Hepatic Vessel Segmentation Using Multi Deep Convolution Network. *Proc. SPIE*, 2017.
- Kitrungrotsakul, T.; Han, X.-H.; Chen, Y.-W. Liver Segmentation Using Superpixel-Based Graph Cuts and Restricted Region of Shape Constraints. *IEEE ICIP*, 2015.
- Kitrungrotsakul, T.; Chen, Y.-W.; Han, X.-H.; Lin, L. Supervoxels-Based Graph Cut for Medical Organ Segmentation. *IFAC Symposium on Biological and Medical Systems*, 2015.