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## Biography & Research Interests

I am currently a Master student in the Department of Biomedical Informatics, National University of Singapore. I wish to pursue research in the interdisciplinary area of artificial intelligence and healthcare to advance non-invasive disease diagnosis and minimally invasive intervention via machine intelligence. Specifically, my research interests include, but are not limited to, Medical Image Analysis via Deep Learning, Computer Vision, Extended Reality, Robotic Surgical Intelligence, and Machine Learning in general. Previously, I received the B.Eng degree in Computer Science and Technology from Northeast Forestry University in 2022, under the supervision from Prof. Zhaowen QIU, a leading expert of national "Ten Thousands Talent Program" in China.

## Publications

- [1] Bai, N.†, **Lin, R.†**, Wang, Z., Cai, S., Huang, J., Su, Z., et al. (2022). [Exploring New Characteristics: Using Deep Learning and 3D Reconstruction to Compare the Original COVID-19 and Its Delta Variant Based on Chest CT](#). *Frontiers in Molecular Biosciences*, 9. (SCI, JCR Q1, IF = 6.113. As † co-first author.)
- [2] **Lin, R.**, Ma, J., Yu, H., & Zhang, Y. (2021, October). [Accurate recognition method of plant leaves based on multi-feature fusion](#). In *International Conference on Image Processing and Intelligent Control (IPIC 2021)* (Vol. 11928, pp. 160-165). SPIE. (EI Compendex. As first author.)
- [3] **Lin, R.**, Zheng, R., & Liu, M. (2021). [Research and design of a translation service platform based on WeChat applets](#). *Computer Era* (09), 39-41+45. (Chinese Core Journal, IF = 1. As first author.)
- [4] Project Co-Art: Improving Children's Imagination through AI-based Human-Computer Co-creation was accepted by *Multimodal Technologies and Interactions* in July 2022. (In press, IEEE UIC'22, selected for Lenovo Open Day 2022) (As corresponding author, when I worked at Lenovo Research)
- [5] Deep learning for predicting the risk of immune checkpoint inhibitor-related pneumonitis in lung cancer was accepted by *Clinical Radiology* in November 2022. (In press, SCI, JCR Q2, IF = 3.389. As † co-first author.)

## Patents

- [1] Human-machine verification method based on situational awareness and image generation. Shen Zuyu, **Lin Ruikai**, Wan Xi. Chinese Invention Patent CN9202214743-CN. (In press. As second author.)
- [2] [An automatic CCD inspection equipment for 5G communication products](#). **Lin Ruikai**, Wang Liyuan, Liu Meiling. Chinese Utility Model Patent CN213715073U, 2021-07-16. (As first author.)

## Research & Work Experiences

- [1] Lenovo Research (Lenovo Global Headquarters) 联想研究院 体验研究与交互创新实验室 Mar/22-Aug/22  
My position was as an Image Algorithm Researcher. Researched on the application of deep learning (especially generative adversarial networks, GANs) in the area of graphic design, and promoted the product iteration of the Xiaohui.ai platform. Participated in algorithm coding and optimization, competitive product analysis, collaboration with VIVINEVO, etc. Main achievement Co-ART was selected for Chinese National Science Week 2022 and Lenovo Innovation Open Day 2022. Above-mentioned Publication[4] and Patent[1] were done in this period. All works were proposed and supervised by [Dr. Yong RUI](#), CTO of Lenovo.
- [2] JD.com 京东集团总部 (59th in the Fortune Global 500 in 2022) Feb/22-Mar/22  
As a Data Analyst (intern), extracted and cleaned operational data from Jingdong Logistics, completed data analysis using statistical and mathematical methods, and then visualized the results. Mainly worked for Jinghui 3.0 Project.

[3] NEFU 3D Digital Technology Institute / A.I. Application Innovation Lab

Sep/19-Dec/21

During this period, I successfully completed two Heilongjiang Province College Students' Innovative Training Project as the project leader (sponsored by a total of RMB 20,000). I received 6 national-level awards and 9 provincial-level awards in competitions, and the prize money amounted to RMB 42,000. Publications[1-3] and Patent[2] were done in this period. All works were supervised by [Prof. Zhaowen QIU](#) (a leading expert of national "Ten Thousands Talent Program" in China) and [Prof. Meiling LIU](#). During undergraduate, I also studied and received exchange certificates in Machine Learning and Big Data Business Analytics courses from National Taiwan University.

[4] Tuomeng Technology Co. LTD 拓盟科技 (National High-Tec Enterprise in China)

Dec/20-Dec/21

During this period, I was involved in research of machine intelligence in thoracic surgery (mainly focusing on non-small cell lung cancer and Cov-19), and the promotion of the product. All research was proposed and supervised by King Abdullah University of Science and Technology (KAUST) [Prof. Xin GAO](#). I am the byline author of four Chinese Computer Software Copyrights. Our product Pneumonia Intelligent Modelling Platform was accepted and used by 12 hospitals by Dec 2021. With the support of Prof. Xin GAO and Prof. Zhaowen QIU, I am one of the co-founders of subsidiary company Harbin Hongtuyuanchi Technology Co. LTD 鸿途远驰科技 (as Deputy General Manager), which aims to use artificial intelligence to improve the efficiency of radiologists and improve non-invasive healthcare. As the first respondent, I led my team to participate several innovation and entrepreneurship competitions in which for start-ups, accumulating 40,000 RMB prizes and gaining investment interest from the Harbin Municipal Government and several companies.

### Awards & Honors (Selected)

- Meritorious Winner of Interdisciplinary Contest in Modeling (Top 7%, by COMAP, 2021)
- 2<sup>nd</sup> Prize in the China TRIZ Innovation Methods Competition (by Ministry of Science and Technology, 2020)
- 3<sup>rd</sup> Prize in the China University Computer Contest (by Ministry of Education, 2020)
- 1<sup>st</sup> Prize of Heilongjiang Province in the National College Students E-commerce "Innovation, Creativity and Entrepreneurship" Challenge (by Ministry of Education, 2021)
- 1<sup>st</sup> Prize of Heilongjiang Province in CUMCM (by China Society for Industrial and Applied Mathematics, 2020)

*\* As first author or team leader in all-mentioned.*

### Miscellaneous

- I hope to participate in more research in the 22/23 academic year with the aim of improving my research skills and planning my future in more detail.
- I am a Chinese National Level 2 Athlete (Model Aeronautics) and worked for the Model Aeronautics and Radio Sports Management Centre (co-operation with DJI), General Administration of Sport of China. Accumulated 4 medals (1 gold, 2 silver and 1 bronze) in national competitions. This experience has given me an indefatigable attitude and a collaborative spirit.
- I specialize in speech and debate, have been awarded the best debater throughout the NEFU Campus Debate Tournament, and the top-4 in the Northeast Region of the World Chinese Debate Championship. From 2019 to 2020, I captained the University Debate Team (in Chinese).
- I like travelling, football, billiards, cooking and trying new things.
- Last update on 31 Oct 2022. [\[Click for Latest CV\]](#)