Ron (Rongyu) Lin, Ph.D., MBA

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EDUCATION

08/2023 - present
Ed.D. Student (Part-time), Johns Hopkins University, Baltimore, United States.
Research Topic: Application of AI-Generated-Content (AIGC) in Education

08/2018 - 12/2022
Ph.D. in Electrical and Computer Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia.
Dissertation: Wide Bandgap Semiconductor Device Design via Machine Learning
Supervisor: Prof. Xiaohang Li

08/2020 - 03/2023
Master of Business Administration, Santa Clara University, Santa Clara, United States.

08/2017 - 01/2018
Ph.D. Student in Physics, Emory University, Atlanta, United States.

09/2013 - 07/2017
Bachelor of Science in Physics, Southern University of Science and Technology, Shenzhen, China.

PROFESSIONAL EXPERIENCES

08/2024 - present
Visiting Assistant Professor, Department of Computer Science, Clark University, Massachusetts, USA.

01/2023 - 08/2024
Principal Data Scientist, Underwriting Team, Capital One Financial Corporation, Texas, USA.

06/2022 - 08/2022
Ph.D. Data Scientist Intern, Underwriting Team, Capital One Financial Corporation, Texas, USA.

08/2018 - 12/2022
Research Assistant, Computer, Electrical and Mathematical Science and Engineering Division, King Abdullah University of Science and Technology, Makkah, Saudi Arabia.

02/2017 - 05/2017

Research Intern, Physical Science and Engineering Division, King Abdullah University of Science and Technology, Makkah, Saudi Arabia.

JOURNAL PUBLICATIONS

1. Yimu Yang, Yinchang Ma, Yuan Yan, Xiaohang Li, Xiangliang Zhang and **Rongyu Lin*** " Machine Learning for 2D Material-Based Devices." ***Submitted***.

2. **Rongyu Lin**, Shengzhi Li, and Xiangliang Zhang." ALIGN4DR: Augmented LLM Integration in Graph Neural Networks for Drug Recommendation." ***in preparation***.

3. **Rongyu Lin**, Zhiyuan Liu, Xinyi Yan, Xiangliang Zhang and Xiaohang Li. " A systematic study on asymmetric AlGaN graded tunnel junction by the machine learning framework " ***in preparation***.

4. Shengzhi Li, **Rongyu Lin**, Xiangliang Zhang and Shichao Pei. "Multi-modal preference alignment remedies degradation of visual instruction tuning on language models." *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*. 2024.

5. Zhiyuan Liu, Yi Lu, Haicheng Cao, Raul Aguileta Vazquez, Rongyu Lin, Na Xiao, Xiao Tang, Mingtao Nong, Shuti Li, Tingang Liu, and Xiaohang Li" Multi-wavelength and broadband AlGaN-based LED for versatile and artificial UV light source." ***Micro and Nanostructures*** (2024): 207755.

6. Yinchang Ma, Yuan Yan, Linqu Luo, Sebastian Pazos, Chenhui Zhang, Xiang Lv, Maolin Chen, Chen Liu, Yizhou Wang, Aitian Chen, Yan Li, Dongxing Zheng, **Rongyu Lin**, Hanin Algaidi, Minglei Sun, Jefferson Zhe Liu, Shaobo Tu, Husam N Alshareef, Cheng Gong, Mario Lanza, Fei Xue, Xixiang Zhang. "High-performance van der Waals antiferroelectric CuCrP2S6-based memristors." **Nature Communications** 14, no. 1 (2023): 7891.

7. Chuanju Wang, Feras AlQatari, Vishal Khandelwal, **Rongyu Lin**, and Xiaohang Li. "Origin of interfacial charges of Al2O3/Si and Al2O3/GaN heterogeneous heterostructures." **Applied Surface Science** 608 (2023): 155099.

8. Xiao Tang, Yi Lu, **Rongyu Lin**, Che-Hao Liao, Yue Zhao, Kuang-Hui Li, Na Xiao, Haicheng Cao, Wedyan Babatain, and Xiaohang Li. "Flexible self-powered DUV photodetectors with high responsivity utilizing Ga2O3/NiO heterostructure on buffered Hastelloy substrates." **Applied Physics Letters** 122, no. 12 (2023).

9. **Rongyu Lin**, Zhiyuan Liu, Peng Han, Ronghui Lin, Yi Lu, Haicheng Cao, Xiao Tang et al. "A machine learning study on superlattice electron blocking layer design for AlGaN deep ultraviolet light-emitting diodes using the stacked XGBoost/LightGBM algorithm." **Journal of Materials Chemistry C** 10, no. 46 (2022): 17602-17610.

10. **Rongyu Lin**, Peng Han, Yue Wang, Ronghui Lin, Yi Lu, Zhiyuan Liu, Xiangliang Zhang, and

Xiaohang Li. "Low Resistance Asymmetric III-Nitride Tunnel Junctions Designed by Machine Learning." **Nanomaterials** 11, no. 10 (2021): 2466.

11. Wen Gu, Yi Lu, **Rongyu Lin**, Wenzhe Guo, Zihui Zhang, Jae-Hyun Ryou, Jianchang Yan, Junxi Wang, Jinmin Li, and Xiaohang Li. "BAlN for III-nitride UV light-emitting diodes: undoped electron blocking layer." **Journal of Physics D: Applied Physics** 54, no. 17 (2021): 175104.

12. Zhiyuan Liu, Yi Lu, Yue Wang, **Rongyu Lin**, Chenxin Xiong, and Xiaohang Li. "Polarization modulation at last quantum barrier for high efficiency AlGaN-based UV LED." **IEEE Photonics Journal** 14, no. 1 (2021): 1-8.

13. Maocheng Shan, Yi Zhang, Ming Tian, **Rongyu Lin**, Jie'an Jiang, Zhihua Zheng, Yongming Zhao et al. "Transverse Electric Lasing at a Record Short Wavelength 244.63 nm from GaN Quantum Wells with Weak Exciton Localization." **ACS Photonics** 8, no. 5 (2021): 1264- 1270.

14. Xiao Tang, Kuang-Hui Li, Che-Hao Liao, Dongxing Zheng, Chen Liu, **Rongyu Lin**, Na Xiao, Shibin Krishna, Jose Tauboada, and Xiaohang Li. "Epitaxial growth of β-Ga 2 O 3 (− 201) thin film on four-fold symmetry CeO 2 (001) substrate for heterogeneous integrations." **Journal of Materials Chemistry C** 9, no. 44 (2021): 15868-15876.

15. Xiao Tang, Kuang-Hui Li, Yue Zhao, Yanxin Sui, Huili Liang, Zeng Liu, Che-Hao Liao Wedyan Babatain, **Rongyu Lin**, Chuanju Wang, Yi Lu**,** Feras S. Alqatari, Zengxia Mei, Weihua Tang, Xiaohang Li. "Quasi-Epitaxial Growth of β-Ga2O3-Coated Wide Band Gap Semiconductor Tape for Flexible UV Photodetectors." **ACS Applied Materials & Interfaces** 14, no. 1 (2021):1304-1314.

16. **Rongyu Lin**, Xinwei Liu, Kaikai Liu, Yi Lu, Xinke Liu, and Xiaohang Li. "BAlN alloy for enhanced two-dimensional electron gas characteristics of GaN/AlGaN heterostructures." **Journal of Physics D: Applied Physics** 53, no. 48 (2020): 48LT01.

CONFERENCE PRESENTATIONS

1. **Rongyu Lin**, Zhiyuan, Peng Han, Ronghui Lin, Yi Lu, Che-Hao Liao, Haicheng Cao, Xiangliang Zhang and Xiaohang Li "A machine learning study on superlattice electron blocking layer design for AlGaN deep ultraviolet light-emitting diodes using the stacked XGBoost/LightGBM algorithm," IWUND 2023, Metz, France, June. 2023

2. **Rongyu Lin**, Zhiyuan, Peng Han, Ronghui Lin, Yi Lu, Che-Hao Liao, Haicheng Cao, Xiangliang Zhang and Xiaohang Li "Machine learning design for UVC light-emitting diodes by stacked XGBoost/LightGBM," IWN 2022, Berlin, Germany, Oct. 2022

3. **Rongyu Lin**, Peng Han, Yue Wang, Chenxin Xiong, Yi Lu, Xiangliang Zhang and Xiaohang Li "Low resistance III-nitride tunnel junction design based on machine learning," SPIE Photonics West, San Francisco, United States, Feb. 2020

4. **Rongyu Lin**, Xinwei Liu, Kaikai Liu, Yi Lu, Xinke Liu and Xiaohang Li "AlGaN/GaN Heterostructure Field-Effect Transistor with BAlN interlayer," SPIE Photonics West, San Francisco, United States, Feb. 2020

5. Wen Gu, Yi Lu, **Rongyu Lin**, Wenzhe Guo, Jianchang Yan, Junxi Wang, Jinmin Li and Xiaohang Li, "High-performance UV LED with an undoped BAlN EBL," SPIE Photonics West, San Francisco, United States, Feb. 2020

6. Chenxin Xiong, Yi Lu, Dongjun Qu, Xiangliang Zhang, **Rongyu Lin** and Xiaohang Li, "Quantum well prediction for III-nitride based deep-UV optoelectronics using machine learning," SPIE Photonics West, San Francisco, United States, Feb. 2020

HONORS AND AWARDS

Merit-based Scholarship, Johns Hopkins University (2023)
Merit-based Scholarship, Santa Clara University (2020)
Full scholarship for MS/PhD study, KAUST (2018-2022)
Summa Cum Laude Graduate, SUSTech - 1 out of 42 in Physics Department (2017)
SUSTech Outstanding Student Scholarship (2016)
Start-up and Innovative Full Scholarship from SUSTech (2013-2016)
Physics experiment design competition, Guangdong Province, First Prize (2014)

TEACHING EXPERIENCES

Courses

08/2024 - present
Courses Instructor, *Department of Computer Science, Clark University,* Worcester, Massachusetts, USA.

- CSCI 120: Introduction to Computing
- CSCI 160: Algorithms

01/2019 - 05/2019
Graduate Course Teaching Assistant, *Department of Electrical and Computer Engineering, King Abdullah University of Science and Technology,* Thuwal, Makkah, Saudi Arabia.

- ECE390B: Special Topics in Photonics

Mentorships

08/2024 - present

Kadin Reed – Undergraduate Research Assistant

Mentoring in AI4Engineering research project at Clark University

Branson Witt, Alexander Vu, Sai Chanda and Aryadeep Ray – Students in Data Science Collaboration Club (DSCO)

Guiding undergraduate students in Kaggle competitions

08/2024 - present

Haiyang Liu – Remote Research Intern

Co-mentoring on Multimodal LLM applications in collaboration with Prof. Shichao Pei from UMass Boston.

03/2019 - 12/2019

Wen Gu – Research Intern

Mentored in device simulation and theoretical calculations as a senior lab member during Ph.D. studies at KAUST, resulting in a publication in Journal of Physics D (JPD).

PROFESSIONAL SERVICES

Reviewers for International Journals:

Transactions on Computational Science – Springer
Applied Intelligence – Springer
Journal of Ambient Intelligence and Humanized Computing – Springer
Journal of Materials Science – Springer
Journal of Automation and Intelligence – Elsevier
Computers and Education: Artificial Intelligence – Elsevier
Sustainable Computing: Informatics and Systems – Elsevier
Engineering Applications of Artificial Intelligence – Elsevier
Micro and Nano Structures – Elsevier
Optics and Laser Technology – Elsevier
Optik – Elsevier
Transactions on Sensor Networks – ACM
IEEE/ACM Transactions on Computational Biology and Bioinformatics – IEEE/ACM
IEEE Transactions on Fuzzy Systems – IEEE
IEEE Transactions on Consumer Electronics – IEEE
Advances in Civil Engineering – Hindawi (Wiley)
International Journal of Image and Graphics – World Scientific
Photonics – MDPI
Sensors – MDPI
Electronics – MDPI
Micromachines – MDPI

Applied Sciences – MDPI
Semiconductor Science and Technology – IOP
Smart Materials and Structures – IOP
Journal of Physics D: Applied Physics – IOP
Physica Scripta - IOP

Committee Service:

Technical Committee Member – ICMRE 2024 (The 10th International Conference on Mechatronics and Robotics Engineering) - Milan, Italy | IEEE Conference List

SOCIAL CONTRIBUTION AND LEADERSHIP

Alumni representative of SUSTech (2018 till present)
President of Student Union of SUSTech (2014 – 2015)

LANGUAGE

English – Master level in oral and in written

Chinese (Mandarin/Hokkien) – Native