

Yanru Chen

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EDUCATION

University of California, San Diego, La Jolla, CA, USA

- Ph.D in Electronic and Computer Engineering Sep 2024 – Present
 - Cumulative GPA: 3.6 / 4.0

Tsinghua University, Beijing, China

- M.S. in Electronic Information (Intelligent Manufacturing) Aug 2021 – Jun 2024
 - Cumulative GPA: 3.78 / 4.0

Jilin University, Changchun, Jilin, China

- B.E. in Electronic Science and Technology - Graduated with College Honors Aug 2017 – Jun 2021
 - Cumulative GPA: 3.53 / 4 (Ranked 6/108)

RESEARCH EXPERIENCES

Systems Energy Efficiency Lab (SEELab), University of California San Diego

- **Research fields: Computer Architecture** Feb 2025 – Present
- Focus: SW/HW Co-design, Processing In Memory, In Storage Processing, LLM, Graph Analytics, Hyperdimensional Computing

Flexible and Printed Electronics Lab, University of California San Diego

- **Project:** (1) Memristor fabrication & (2) Multimodal sensing glove Sep 2024 – Jan 2025
- Focus: MEMS & NEMS fabrication, Biomedical signal processing

Micro-Electro-Mechanical System Laboratory, Tsinghua University

- **Project:** Wearable acetone gas sensor for breath detection and analysis Oct 2021 – Jun 2024
- Focus: Wearable sensors, Semi-conductor gas sensor, Microfabrication techniques
- **Project:** Laser-Induced Graphene Flexible Strain Sensor Sep 2022 – Nov 2023
- Focus: High-D Graphene, Flexible strain sensor, Microfabrication techniques

Computational Medicine Laboratory, Western Ontario University

- **Project:** CT Perfusion heterogeneity analysis using PM3 and ML Jan 2020 – Aug 2020
- Focus: Fractal dimension analysis, Machine learning, Reconstruct 3D perfusion maps

PUBLICATIONS

CONFERENCES

- [1] Yixin Liu*, **Yanru Chen***, Zhibiao Wang, and Min Zhang†, "Enhanced Electrical Conductivity in Laser-Induced Graphene-Silicon Carbide Laminated Nanosheets for Flexible Strain Sensors and Pulse Wave Velocity Assessment," in *IEEE 37th International Conference on Micro Electro Mechanical Systems (MEMS)*, Austin, TX, USA, pp. 919-922, 2024. (Poster, presented by Y. Chen)
- [2] **Yanru Chen**, Jiaqi Liu, Yixin Liu, and Min Zhang†, "Enhanced Strain Resistance of Fractal Fiber Laser-Induced Graphene for Flexible Electrodes Via Annealing and Plasma Etching," in *23rd International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers)*, 2025, pp. 1109-1112. (Poster, presented by Y. Chen)
- [3] **Yanru Chen**, Sanjay R. Kharche†, Yan Min Zhang, G.H. Janssen, and Christopher W. McIntyre†, "Quantifying microvascular alterations due to a pharmacological agent," in *42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Montreal, QC, Canada, 2020. (Oral, presented by Y. Chen)
- [4] Sanjay R. Kharche†, **Yanru Chen**, and Christopher W. McIntyre†, "Fractal Dimension Based Texture Analysis of CT Perfusion Imaging," in *42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Montreal, QC, Canada, 2020. (Oral, presented by Y. Chen)

JOURNALS

- [1] **Yanru Chen**, Yixin Liu, Jiaqi Liu, Yuzhen Li, Yuhan Liu, Wenjie Zhang, Liuyang Han, Dongkai Wang, Shuhong Cao, Hanxiao Liu, and Min Zhang†, "Porous PDMS–ZnO Wearable Gas Sensor for Acetone Biomarker Detection and Breath Analysis," *ACS Applied Materials & Interfaces*, vol. 16, no. 45, pp. 62436-62445, 2024.

- [2] Yuhan Liu, Liuyang Han, Siqi Lv, Tao Jiang, Mingkai Duan, Hanyu Guo, Yuzhen Li, Qisen Xie, **Yanru Chen**, Dongkai Wang, and Min Zhang†, "Emotional and Directional Enabled Programmable Flexible Haptic Interface for Enhanced Cognition in Disabled Community," *Research*, vol. 8, pp. 0714, 2025.
- [3] Jiaqi Liu, Yuan Yu, Rujun Zhang, **Yanru Chen**, Yanlong Guo, Yi Zhang, Ran Tao, Jing-Ting Luo, Hairong Zheng, Pingfa Feng†, and Min Zhang†, "Trapping nanoscale particles via quasi-Scholte mode in acoustofluidics," *Lab on a Chip*, 2025.
- [4] Qisen Xie, Liuyang Han, Jie Liu, Wenjie Zhang, Liuyan Zhao, Yuhan Liu, **Yanru Chen**, Yuzhen Li, Qian Zhou, Ying Dong, and Min Zhang†, "Kirigami-Inspired Stretchable Piezoelectret Sensor for Analysis and Assessment of Parkinson's Tremor," *Advanced Healthcare Materials*, vol. 14, no. 1, pp. 2402010, 2025.
- [5] Yuzhen Li, Yunfei Wang, Yixin Liu, Yuhan Liu, Liuyang Han, **Yanru Chen**, Juntian Qu, Puxiang Lai, and Xiang Qian†, "Simultaneously encapsulation and formation of PDMS-MWCNTs composites for multi-directional microchannel force sensors," *IEEE Sensors Journal*, 2024.

PREPRINTS & UNDER REVIEW

- [1] **Yanru Chen**, "Low-Cost Spin-Coating Process for SnO₂-Based Memristors: Comparative Study of Different Solvent Systems and Device Performance," *Available at SSRN 5208743*, 2025. (Preprint)
- [2] **Yanru Chen***, Zheyu Li*, Keming Fan, Runyang Tian, John Hsu, Minxuan Zhou, and Tajana Rosing†, "RAPID-Graph: Recursive All-Pairs Shortest Paths Using Processing-in-Memory for Dynamic Programming on Graph," Submitted to *Design, Automation and Test in Europe Conference (DATE)*, 2026. (Under Review)
- [3] **Yanru Chen***, Runyang Tian*, Yue Pan, Zheyu Li, Weuhong Xu, and Tajana Rosing†, "CHIME: Chiplet-based Heterogeneous Near-Memory Acceleration for Edge Multimodal LLM Inference," Submitted to *Design, Automation and Test in Europe Conference (DATE)*, 2026. (Under Review)

AWARDS & SCHOLARSHIPS

- Workshop on Learning and Information Theory, 2nd Best Oral Presentation Award Nov 2024
- Jacobs Fellowship, University of California San Diego Aug 2024
- ECE Department Fellowship, University of California San Diego Feb 2024
- Outstanding Undergraduate Graduation Project Award, Jilin University Jun 2021
- Excellent Student of the College (Top 5%), Jilin University 2018 – 2021
- MITACS Globalink Research Internship Award, Western University Feb 2020
- National Mathematical Modeling Competition, Provincial Second Prize Nov 2019
- Electronic Smart Manufacturing Innovation Competition, Third Prize, Jilin University Dec 2017
- Singer Competition, Audience Favorite Award, Jilin University Nov 2017

PROFESSIONAL EXPERIENCES

- Shenzhen Hanit Industrial Technologies Co.**, Shenzhen, Guangdong, China
- Assistant Engineer, Department of Hardware Jun 2023 – Oct 2023
- Vivolight Medical Device & Technology Co.**, Shenzhen, Guangdong, China
- Algorithm Intern, Department of Algorithm Apr 2021 – May 2021

OTHER SKILLS

- Programming Languages: Python (NumPy, SciPy, TensorFlow), C++, MATLAB
- Hardware Description Languages (HDLs): Verilog, SystemVerilog
- EDA & Simulation Tools: Altium Designer, Cadence Virtuoso, COMSOL, AutoCAD
- Hardware & Fabrication: PCB/FPCB Design, ACF Bonding, Laser Direct Writing, Lithography
- Platforms & Microcontrollers: Arduino, ESP32, FPGA (Xilinx/Altera)