

Yanru Chen

yac054@ucsd.edu | +1 858-412-9248 | <https://yanruchen054.github.io/>

Education

University of California, San Diego, La Jolla, CA

Sep 2024–Present

Ph.D. in Electronic & Computer Engineering

GPA: 3.35/4.0

Tsinghua University, Beijing, China

Aug 2021–Jun 2024

M.S. in Electronic Information

GPA: 3.78/4.0

Jilin University (Project 985), Changchun, China

Aug 2017–Jun 2021

B.E. in Electronic Science and Technology (College Honors)

GPA: 3.53/4.0 (Rank 6/108)

Research Experience

Systems Energy Efficiency Lab, UCSD

Graduate Research Student

Feb 2025–Present

- Co-designed a PCM-based PIM accelerator for All-Pairs Shortest Path on large graphs with recursive partitioning into 2D arrays.
- Integrated a 2.5D UCIe stack (PCM, HBM3, FeNAND) achieving $>5\times$ speedup and $>1000\times$ energy efficiency versus CPU/GPU.

Flexible and Printed Electronics Lab, UCSD

Graduate Research Student

Sep 2024–Jan 2025

- Fabricated SnO_2 memristor arrays (ON/OFF $>1000\times$) via spin-coating; optimized solvent and yield.
- Contributed to multimodal glove sensor design, signal processing, and Parkinson's muscle tone evaluation.

Micro-Electro-Mechanical Systems Lab, Tsinghua University

Graduate Research Student

Oct 2021–Jun 2024

- Developed wearable ZnO–PDMS gas sensors for acetone detection; engineered porous flexible structures (60% stretch).
- Synthesized ZnO nanospheres, studied UV-enhanced response, and characterized frequency-dependent gas sensitivity.

Computational Medicine Lab, Western University

Undergraduate Research Intern

Jan 2020–Aug 2020

- Reconstructed 3D perfusion maps from CT slices; applied fractal dimension analysis using in-house algorithms.

Publications

Journals

1. **Chen, Y.***; Liu, Y.*; ...; Zhang, M. “Porous PDMS–ZnO Wearable Gas Sensor for Acetone Biomarker Detection and Breath Analysis,” *Adv. Mater. Interfaces*, Oct 2024.
2. Xie, Q.; ...; **Chen, Y.**; Wang, X.* “Kirigami-Inspired Stretchable Piezoelectret Sensor for Analysis and Assessment of Parkinson’s Tremor,” *Adv. Healthcare Mater.*, Sep 2024.
3. Li, Y.; ...; **Chen, Y.**; ... “Simultaneously encapsulation and formation of PDMS-MWCNTs composites for multi-directional microchannel force sensors,” *IEEE Sens. J.*, Sep 2024.

Conferences

1. **Chen, Y.***; Li, Z.*; ... “RAPID-Graph: Recursive APSP using Processing-In-Memory for Dynamic Programming on Graphs,” ASPDAC 2025 (Submitted).
2. **Chen, Y.**; ... “Enhanced Strain Resistance of Fractal Fiber Laser-Induced Graphene for Flexible Electrodes via Annealing and Plasma Etching,” Tansducer 2025(Poster) & MRS Fall 2024 (Poster).
3. Liu, Y.; **Chen, Y.**; ... Zhang, M. “ENHANCED ELECTRICAL CONDUCTIVITY IN LASER-INDUCED GRAPHENE-SILICON CARBIDE LAMINATED NANOSHEETS FOR FLEXIBLE STRAIN SENSORS AND PULSE WAVE VELOCITY ASSESSMENT,” IEEE MEMS 2024 (Poster).
4. **Chen, Y.**; Kharche, S.R.; ... “Quantifying microvascular alterations due to a pharmacological agent,” IEEE EMBC 2020 (Oral).
5. Kharche, S.R.; **Chen, Y.**; McIntyre, C.W. “Fractal Dimension Based Texture Analysis of CT Perfusion Imaging,” IEEE EMBC 2020 (Oral).

Awards & Scholarships

- 2nd Best Oral Presentation, Workshop on Learning and Information Theory, Nov 2024
- Jacobs Fellowship, UCSD, Aug 2024
- ECE Department Fellowship, UCSD, Feb 2024
- Outstanding UG Graduation Project Award, Jilin Univ., Jun 2021
- First-Class Scholarship (Top 5%), Jilin Univ., 2018–2021
- MITACS Globalink Internship Award, Western Univ., Feb 2020
- 2nd Prize, Nat’l Math Modeling Competition, Nov 2019
- 3rd Prize, Electronic Smart Mfg Innovation Competition, Dec 2017

Professional Experience

Shenzhen Hanit Industrial Technologies Co., Shenzhen, China Jun 2023–Oct 2023
Assistant Engineer, Hardware Dept.

Vivolight Medical Device & Technology Co., Shenzhen, China Apr 2021–May 2021
Algorithm Intern, Algorithm Dept.

Skills

MATLAB | Python (NumPy, SciPy, TensorFlow) | Arduino | AutoCAD (2D & 3D) | Design Compiler