

Rui (Rick) Xie

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EDUCATION

- **Ph.D. Student, Computer System Engineering**
Rensselaer Polytechnic Institute, Advisor: Tong Zhang Troy, NY, United States
Aug. 2022 – Present
- **B.Eng with Honors, Microelectronics Science and Engineering**
Southern University of Science and Technology, Advisor: Quan Chen Shenzhen, China
Aug. 2018 – Jun. 2022

EXPERIENCE

- **Engineer Intern**
BTD Technologies Shenzhen, China
Dec. 2021 – Jun. 2022
- **Summer Research Intern**
The University of Hong Kong Remote
Jun. 2021 – Aug. 2021
- **Visiting Student, Oxford International Study Abroad Programme**
University of Oxford Oxford, United Kingdom
Jul. 2019 – Aug. 2019

RESEARCH INTERESTS

- **EDA Circuits Simulation**
Electronic Design Automation
 - **Steady-State Memristor Crossbar Array (MCA) Circuit Simulation:**
 1. Exploited the structural regularity of MCAs to develop preconditioner;
 2. Designed the inverse process by Kronecker product and block matrix formula;
 3. Tested the numerical verification of the flow;
 - **Surrogate Modeling of Electro-Thermal Simulation:**
 1. Used *Ansys Icepak* and simulated the process of SiC sandwich devices;
 2. Designed the surrogate model.
 - **RRAM (Resistive RAM) Non-Ideal Simulation:**
 1. Designed the multiply-add method;
 2. Developed the simulator by noise model and non-linearity.

HONORS AND AWARDS

- Excellent Graduate in Southern University of Science and Technology, Jun. 2022
- Graduation with Honor: College Graduate Excellence Award, Jun. 2022
- First Class of the Merit Student Scholarship, Sep. 2021
- Outstanding Cadre Award of Zhicheng College, May. 2021
- First Prize of College Student Innovation and Entrepreneurship Training Program, Mar. 2021
- Second Class of the Merit Student Scholarship, Sep. 2020
- Third Prize of China College IC Competition in Southern China, Jul. 2020
- Third Class of the Merit Student Scholarship, Sep. 2019

SERVICE

- Alumni Mentor of Zhicheng College at SUSTech, 2022

SKILLS

- **Programming Languages:** Python, MATLAB, C, C++, Java, Verilog HDL, Scala
- **Software:** Virtuoso, Quartus, ModelSim, Icepack, Silvaco, LTSPICE, Comsol, SolidWorks, AutoCAD
- **Spoken Languages:** Mandarin, English, Cantonese, Japanese (Learning)

PUBLICATIONS

1. Yuan Ren, Wenyong Zhou, Ziyi Guan, **Rui Xie**, Quan Chen, Hao Yu, Ngai Wong, XMAS: An Efficient Customizable Flow for Crossbarred-Memristor Architecture Search, 59th Design Automation Conference Engineering Track
2. **Xie, R.**, Song, M., Zhou, J., Mei, J., & Chen, Q. (2021). A Fast Method for Steady-State Memristor Crossbar Array Circuit Simulation, 2021 IEEE International Conference on Integrated Circuits Technologies and Applications

PATENTS

1. Chen, Q. Fan, D. **Xie, R.** Song, M. Construction and optimization of neural networks for memristor arrays based on circuit simulation. CN 202110673101.5