

Rui (Rick) Xie

Portfolio: rickxie.cn
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EDUCATION

- **PhD Student, Rensselaer Polytechnic Institute** Troy, NY, United States
Department of Electrical, Computer and Systems Engineering, Advisor: Tong Zhang Aug. 2022-Present
- **B. Eng (Honor), Southern University of Science and Technology** Shenzhen, China
School of Microelectronics, Advisor: Quan Chen Aug. 2018 – Jun. 2022

EXPERIENCE

- **University of Oxford** Oxford, United Kingdom
Oxford International Study Abroad Programme Jul. 2019 – Aug. 2019
 - **Big Data and Social Media:** R Programming and Data Analysis.
 - **University, Tutorial System and Interdisciplinary:** Research on Mass Psychology and Higher Education.
- **The University of Hong Kong** Remote
Summer Research Intern Jun. 2021 – Aug. 2021
 - **Feedback States Convergence Adjustment of Memristor:** Adjust the device to I-V curve.
 - **ARC One Implementation:** Converge method of memristor device on *ArC ONE* and Keysights B1500A.

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.
 - **RDRAM (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** Jun. 2022
SUSTech
- **Graduation with Honor: College Graduate Excellence Award** Jun. 2022
School of Microelectronics, SUSTech
- **First Class of the Merit Student Scholarship** Sep. 2021
SUSTech < 3%
- **Outstanding Cadre Award of Zhicheng College** May. 2021
Zhicheng College, SUSTech 3%
- **First Prize of College Student Innovation and Entrepreneurship Training Program** Mar. 2021
School of Microelectronics, SUSTech 10%
- **Second Class of the Merit Student Scholarship** Sep. 2020
SUSTech < 7%
- **Third Prize of China College IC Competition in Southern China** Jul. 2020
Ministry of Industry and Information Technology < 10%
- **Third Class of the Merit Student Scholarship** Sep. 2019
SUSTech < 20%

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