

EDUCATION

- **Princeton University** Princeton, NJ
Ph.D. in Electrical and Computer Engineering Aug 2024 - Current
- **Peking University** Beijing, China
B. S. in Applied Physics, Department of EECS; CGPA: 89/100 (WES-calculated: 3.81/4.00) Sep 2020 - Jul 2024
- **University of Michigan** Ann Arbor, MI
Visiting Scholar to Michigan Integrated Circuits Laboratory, Advisor: Prof. David Blaauw Jun 2023 - Dec 2023

RESEARCH EXPERIENCE

- **Low Power, Energy Efficient Temperature Sensor** Peking University
Research Assistant to: Prof. Xiyuan Tang Feb 2024 - Jun 2024
 - Completed CMOS temperature sensor design in TSMC 28nm Process
 - Proposed a novel temperature-voltage transducer, designed a 12-bit SAR ADC for quantization
 - Achieved 0.15K resolution, with 12.6pJ/conversion and $0.29pJ^{\circ}C^2$ FoM in post-layout simulation
- **High Efficiency CMOS Digital Transmitter in Localization System** University of Michigan
Research Assistant to: Prof. David Blaauw Jun 2023 - Dec 2023
 - Completed CMOS Class-D power amplifier design and TX system integration in TSMC 28nm Process, which is ready for tape-out
 - Proposed the idea of bonding-wire based harmonic tuning for class-D power amplifier, adopted eight-shaped inductor structure for inter-stage matching, minimizing EM coupling
 - Participated in satellite flyover tests, power amplifier chip testing and debugging
 - Co-designed the TX with compact battery and antenna. Achieved 40% peak PAE and 17dBm output power in hybrid post-layout & EM simulation
- **High Precision, Low Latency Capacitance-to-Digital Converter** Peking University
Research Assistant to: Prof. Xiyuan Tang Dec 2022 - Nov 2023
 - Completed CMOS capacitive sensor design and measurement in TSMC 28nm Process, in cooperation with PhD student Zilong in PRIME lab
 - Proposed hybrid DT-CT architecture for CDC, adopted dead-band switches to eliminate ELD issues
 - Modeled the incremental $\Delta\Sigma$ loop in MATLAB independently, achieved over 100dB SQNR in the entire measurement range
 - Designed the FIA amplifier and loop integrator with feed-forward path
 - Achieved 100aF resolution, 14-bit ENOB and 181.8dB Schreier FoM in measurement. Published in *IEEE CICC 2024* (second author)
- **Power Management Unit in Advanced Process Node** Peking University
Research Assistant to: Prof. Weixin Gai Mar 2022 - Nov 2022
 - Completed CMOS power management circuit design applied in high speed wireline transceiver in TSMC 12nm FinFET process, which is ready for tape-out
 - Set up design targets independently, achieved >80dB PSRR in low frequency and ~10ppm temperature coefficient in post-layout simulation

PUBLICATIONS

- Zilong Shen, **Jiajun Tang**, Haoyang Luo, Zhongyi Wu, Zongnan Wang, Xing Zhang, Xiyuan Tang, and Yuan Wang, "A 181.8dB FoMs Zoom Capacitance-to-Digital Converter with kT/C Noise Cancellation and Dead Band Operation," in *2024 IEEE Custom Integrated Circuits Conference (CICC)*.

RELEVANT COURSES

- **Circuit Design:** Radio Frequency Integrated Circuit; Advanced Analog Integrated Circuits Design; Principle and Design of Integrated Circuit; Fundamentals of Electronic Circuits and Experiments
- **Device & Physics:** Physics of Semiconductor; Integrated Circuit Devices; Integrated Circuit Manufacturing Technology; Nanoionics; Electrodynamics; Theoretical Mechanics; Quantum Mechanics; Solid State Physics
- **Signal Processing:** Digital Signal Processing; Signals and Systems (Honor Track)
- **Computing:** Introduction to Computation; Data Structure and Algorithm; Computer Architecture and Intelligent Chip Design; Future Computing with Novel Information Device

SKILLS SUMMARY

- **Languages:** Mandarin (Native); English
- **Programming:** C++, Python, MATLAB
- **Circuit Design and Simulation:** Cadence Virtuoso, HSpice, Verilog, Chisel, HFSS

EXTRA-CURRICULUM OUTREACH

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| ◦ Teaching assistant for course “Undergraduate Research Practice for Electronic Information Science” at Peking University | Feb, 2024 |
| ◦ Vice President for the Students’ Association for Science and Technology at Peking University | Sep, 2022 |
| ◦ Member of department’s basketball team at Peking University | Sep, 2020 |

HONORS AND AWARDS

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| ◦ Merit Student at Peking University | Sep, 2023 |
| ◦ Third Prize Scholarship at Peking University | Sep, 2023 |
| ◦ Third Award in the Final Competition of Integrated Circuit EDA Elite Challenge in China | Dec, 2022 |
| ◦ Award for Scientific Research Excellents at Peking University | Sep, 2022 |
| ◦ Award for Academic Excellents at Peking University | Sep, 2021 |