Yizhou XU

Tel: 86-15268086296 Email: chn_xuyizhou@outlook.com

Personal Website & Chip Gallery: About Me - Yizhou Xu's Blog (egogreenal.github.io)

Research Interest: Analog / Mixed-signal / Radio-frequency IC design, IC for Physics

Education

University of Chinese Academy of Sciences (UCAS) **Beijing, China**

Bachelor of Engineering (Expected 2025) Aug 2021 ~ July 2025

Major: Electronic Information Engineering **GPA: 3.98/4; Ranking: 1/20; Major GPA: 3.99/4**

Massachusetts Institute of Technology (MIT) **Cambridge, MA**

Special Student Program 2024 Spring Feb 2024 ~ May 2024

Department: Electrical Engineering and Computer Science (EECS) **GPA: 5.0/5.0**

Academic Experiences

Rice University | Advisor: Prof. Taiyun Chi | Undergraduate Research Assistant

AI-assisted RFIC Design **July 2024 ~ Present**

- Developing new electro-magnetic & circuitry inverse design flow for radio-frequency integrated circuits (RFIC) with the assistance of artificial neural networks (ANN) and general machine learning (ML) methods. Targeting automatic end-to-end synthesis of an RF transceiver system. One conference paper in preparation.

Massachusetts Institute of Technology (MIT) | Advisor: Prof. Ruonan Han | Visiting Undergraduate

Wideband Power Amplifier Design for mm-Wave Application **Feb 2024 ~ June 2024**

- An undergraduate research project. Theoretical analysis and simulation for a high power-back-off (PBO) and ultra-wideband (up to 115% FBW) distributed Doherty-like power amplifier (DDPA) design for mm-wave application (designed with Intel 16 FinFET process).
- Some low-frequency circuit modules (digitally controlled operational amplifier) schematic and layout design with Intel 16 FinFET process. The 0.01mm^2 chip is taped out in May 2024.

Institute of Semiconductors, Chinese Academy of Sciences | Advisor: Prof. Nan Qi | Research Assistant

First Applicant of $11k Funds from Beijing Natural Science Foundation & UCAS

Ultra-wideband Driver Circuits Design for Optical Communication **Dec 2023 ~ Present**

- Ultra-wideband differential distributed (travelling-wave) amplifier (DDA) design for optical modulator driver (e.g., MRM / MZM / VCSEL) targeting 224Gb/s channel speed with GlobalFoundries 90nm SiGe process. Responsible for a 1.2mm^2 chip which is taped out in June 2024. A four-channel variation is currently under design and estimated to be taped out in December 2024.

Monolithically Integrated Optical Coherent Transmitter Design **June 2024 ~ Aug 2024**

- Monolithically integrated CMOS mixed-signal driver circuits, Mach-Zehnder modulator (MZM) and electrical-optical interconnection design with GlobalFoundries 45nm SiPh CMOS SOI process. Completed silicon-photonic co-design and co-simulation process in Cadence SiPh platform. A simulation-based first-author paper has been published on *IEEE ICTA 2024* from this project.

Design of Bandgap Reference for Optical Communication Circuits **Aug 2023 ~ Sep 2023**

- Designing a Bandgap Reference for optical communication circuits upon GlobalFoundries 45nm CMOS SOI process (without tape-out).

Publications

Y. Xu et al., A 64-GBaud 64-QAM Optical Coherent Transmitter with Monolithically Integrated Driver and I/Q Modulator in 45-nm SOI CMOS, *2024 IEEE International Conference on Integrated Circuits, Technologies and Applications (ICTA)*, Hangzhou, China. **[Accepted]**

Honors and Awards

2024 China National Scholarship (Top 1%)	Nov 2024
UCAS Overseas Graduate Studies Fellowship (Top 0.5%)	Sep 2024
2023 China National Scholarship (Top 1%)	Oct 2023
UCAS Peacemaker to Merit Student (Top 1%)	June 2023
2023 Mathematical Contest in Modeling, Finalist (Top 3%)	Feb 2023
2022 China Collegiate Programming Contest, Guangzhou Site, Gold Medal	Nov 2022
The 46th ICPC Asia Regional Contest Jinan, Gold Medal	Nov 2021

Extracurricular Activities

Teaching Assistant: Non-linear Electronic Circuits **Aug 2024 ~ Jan 2025**

- Teaching EDA tools like ADS for RF design at University of Chinese Academy of Sciences.

Leader of New Media Group, Student Union of Chinese Academy of Sciences **July 2022 ~ July 2023**

- Managed content publishing for new media platform of Student Union at UCAS.

Student Coach of Algorithm Association at UCAS **July 2023 ~ Aug 2024**

- Organizing weekly, winter and summer training sessions, as well as annual school algorithm competition. Established an Online-Judge System for University of Chinese Academy of Sciences.

Skills

Software: Cadence / Simens IC Design Suite, Keysight ADS, Ansys EDT (HFSS), AMD Vivado

Language: Mandarin (Native Speaker) / English (Fluent)

Programming: C / C++ / C# / Python / MATLAB / Wolfram / Cadence SKILL / Verilog / Verilog-a

TOEFL: 103 (R27, L30, S22, W24) **July 20, 2024**

GRE: 322+4.0 (V152, Q170, AW4.0) **July 21, 2023**