Yizhou XU

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Personal Website: 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) **Sep 2021 - Present**

Bachelor of Engineering (Expected 2025)

Major: Electronic Information Engineering

GPA: 3.98/4; Ranking: 1/20; Major GPA: 3.99/4

Massachusetts Institute of Technology (MIT) **Feb 2024 - May 2024**

Special Student Program 2024 Spring

Department: Electrical Engineering and Computer Science (EECS)

GPA: 5.0/5.0

Academic Experiences

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

Institution: Rice University

Director: Prof. Taiyun Chi

- 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 a RF transceiver system. One conference paper in preparation.

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

Institution: Institute of Semiconductors, Chinese Academy of Sciences

Partly Funded by: Beijing Natural Science Foundation & UCAS (First Applicant, $11k in total)

Director: Prof. Nan Qi

- Ultra-wideband differential distributed amplifier (DDA) design for optical modulator driver (for 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**

Institution: Institute of Semiconductors, Chinese Academy of Sciences

Supported by: Beijing Natural Science Foundation (First Applicant)

Director: Prof. Nan Qi

- Monolithically integrated CMOS mixed-signal driver circuits design and Mach-Zehnder modulator (MZM) design with GlobalFoundries 45nm SiPh CMOS SOI process. Completed electronic-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.

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

Institution: Massachusetts Institute of Technology

Director: Prof. Ruonan Han

- 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 chip is taped out in May 2024.

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

Institution: Institute of Semiconductors, Chinese Academy of Sciences

Director: Prof. Nan Qi

- 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

2023 Mathematical Contest in Modeling, Finalist (Top 3%) **Feb 22, 2023**

2022 China Collegiate Programming Contest, Guangzhou Site, Gold Medal **Nov 13, 2022**

The 46th ICPC Asia Regional Contest Jinan, Gold Medal **Nov 14, 2021**

2023 China National Scholarship **Oct 2023**

2024 China National Scholarship **Nov 2024**

UCAS Peacemaker to Merit Student (Top 1%) **June 2023**

UCAS First-Class Scholarship (Top 5%) **Nov 2022**

Extracurricular Activities

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

- Teaching EDA tools like ADS 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 University of Chinese Academy of Sciences **July 2023 ~ Aug 2024**

- Organizing weekly, winter and summer training sessions, as well as annual school algorithm competition. Established an Online-Judge System at 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) **TEST DATE: July 20, 2024**

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