ZIHAO CHEN

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EXPERIENCE

Alibaba DAMO Academy Aug. 2026 – Present

Research Scientist & Joint Postdoctoral Fellow with Fudan University ✦AliStar

- **Research focus:** Large language model (LLM) agents, agent self-evolution, and recursive self-improvement (RSI), with a focus on knowledge discovery and applications in complex domains such as electronic design automation (EDA) and quantitative finance.

Fudan University, State Key Laboratory of Integrated Chips and Systems Feb. 2021 – Jun. 2026

Graduate Research Assistant ✦Advisors: Prof. Fan Yang, Prof. Li Shang, and Prof. Xuan Zeng

- **Research focus:** LLM training, multi-agent systems, and reinforcement learning (RL) for EDA, spanning analog circuit synthesis and sizing, RTL code generation, and physical design, with publications in leading venues including TCAD, TODAES, DAC, ICCAD, DATE, and ASPDAC.

EDUCATION

Fudan University Sep. 2021 – Jun. 2026

Ph.D. in Electronic Science and Technology ✦Outstanding Graduate of Shanghai

Fudan University Sep. 2017 – Jun. 2021

B.E. in Microelectronic Science and Engineering

PUBLICATIONS

Zihao Chen, Jiayin Wang, Ziyi Sun, Ji Zhuang, Jinyi Shen, Xiaoyue Ke, Li Shang, Xuan Zeng, and Fan Yang, *"LLM-Assisted Op-Amp Behavioral-Level Design via Agentic Human-Mimicking Reasoning,"* arXiv preprint, 2026.

Zihao Chen, Chung-Kuan Cheng, Yuhao Ren, Yucheng Wang, and Zhiang Wang, *"AutoDRI: Bridging the Semantic Gap for Automated Design Rule Integration in CP-SAT-Based Cell Synthesis under Multi-Patterning,"* IEEE/ACM International Conference on Computer-Aided Design (ICCAD), 2026.

Zihao Chen, Ji Zhuang, Jinyi Shen, Xiaoyue Ke, Xinyi Yang, Mingjie Zhou, Zhuoyao Du, Xu Yan, Zhouyang Wu, Zhenyu Xu, Jiangli Huang, Li Shang, Xuan Zeng, and Fan Yang, *"Dataset Construction for Training LLM to Learn Analog Circuit Knowledge,"* ACM Transactions on Design Automation of Electronic Systems (TODAES), 2026.

Zihao Chen, Zihan Lin, Xinhua Chen, Zhiyi Liu, Changxu Liu, Yifan Song, Yuxuan Qiao, Junjie Zuo, Yifei Feng, and Fan Yang, *"Spec2Doc2RTL: RTL Generation from Specification with Natural Language Representation,"* International Symposium of Electronic Design Automation (ISEDA), 2025.

Zihao Chen, Jiangli Huang, Yiting Liu, Fan Yang, Li Shang, Dian Zhou, and Xuan Zeng, *"Artisan: Automated Operational Amplifier Design via Domain-specific Large Language Model,"* Design Automation Conference (DAC), 2024.

Zihao Chen, Songlei Meng, Fan Yang, Li Shang, and Xuan Zeng, *"MACRO: Multi-agent Reinforcement Learning-based Cross-layer Optimization of Operational Amplifier,"* Asia and South Pacific Design Automation Conference (ASPDAC), 2024.

Zihao Chen, Songlei Meng, Fan Yang, Li Shang, and Xuan Zeng, *"TOTAL: Topology Optimization of Operational Amplifier via Reinforcement Learning,"* International Symposium on Quality Electronic Design (ISQED), 2023.

Zihao Chen, Fan Yang, Li Shang, and Xuan Zeng, *"Automated and Agile Design of Layout Hotspot Detector via Neural Architecture Search,"* Design, Automation and Test in Europe (DATE), 2023.

Jinyi Shen, **Zihao Chen**, Ji Zhuang, Jiangli Huang, Fan Yang, Li Shang, Zhaori Bi, Changhao Yan, Dian Zhou, and Xuan Zeng, *"Atelier: An Automated Analog Circuit Design Framework via Multiple Large Language Model-based Agents,"* IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 2025.

Zhengqi Gao, **Zihao Chen**, Jun Tao, Yangfeng Sun, Dian Zhou, and Xuan Zeng, *"Bayesian Inference on Introduced General Region: An Efficient Parametric Yield Estimation Method for Integrated Circuits,"* Asia and South Pacific Design Automation Conference (ASPDAC), 2021.

Zheng Wu, Zhuochu Yang, Zhuoyuan Yang, **Zihao Chen**, Li Shang, and Fan Yang, *"ChatArch: A Knowledge-based Graph-of-thought LLM Framework for Processor Architecture Design,"* ACM Transactions on Design Automation of Electronic Systems (TODAES), 2026.

Ji Zhuang, Zishuo Wang, Jinyi Shen, **Zihao Chen**, and Fan Yang, *"GRASP: A Gm/Id-based Multi-Agent Reasoning Framework for Sizing Parameters in Amplifiers,"* IEEE International Conference on Artificial Intelligence Circuits and Systems (AICAS), 2026.

Zheng Wu, Zhuochu Yang, Zhuoyuan Yang, **Zihao Chen**, Li Shang, and Fan Yang, *"ArchBot: A Labour-free Processor Architecture Design Framework via Experienced LLM,"* International Symposium of Electronic Design Automation (ISEDA), 2025.

OPEN-SOURCE PROJECTS

White-Op

An agentic white-box framework for op-amp behavioral-level parameter design. By decoupling symbolic reasoning from numerical solving with a causality-driven iteration loop, White-Op mimics human analytical derivation to produce interpretable and reliable designs across diverse op-amp topologies.

GRASP

A multi-agent reasoning framework for op-amp sizing built on the gm/Id methodology. GRASP combines Chain-of-Thought-guided formula derivation with collaborating design, calculation, simulation, and revision agents to achieve fast convergence, strong gain-bandwidth-power trade-offs, and interpretable revision trajectories.

Atelier

A training-free multi-agent framework for automated analog circuit design. Building upon Artisan, Atelier distills analog design expertise into a compact knowledge base and coordinates LLM-based agents to achieve strong circuit performance and high design success rates without model fine-tuning.

SELECTED HONORS

Outstanding Graduate of Shanghai (Top 1%)	2026
SMIC Scholarship, Fudan University (Top 1%)	2025
AICAS Grand Challenge 2025 (Track 3), Global 2nd Prize	2025
Outstanding Student, Fudan University	2019, 2020, 2021, 2022, 2024, 2025
KLA Scholarship, Fudan University (Top 1%)	2023
Outstanding TA, Fudan University	2023
First-Class Scholarship, Fudan University (Top 5%)	2019
Contemporary Undergraduate Mathematical Contest in Modeling (Shanghai Division), 1st Prize (Top 3%)	2019

ACADEMIC SERVICES

Reviewer, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)	Since 2025
Reviewer, ACM Transactions on Design Automation of Electronic Systems (TODAES)	Since 2024
Acting Session Chair & Speaker, International Symposium of Electronic Design Automation (ISEDA)	2025
Reviewer, International Symposium of Electronic Design Automation (ISEDA)	2025
Reviewer, IEEE International Conference on ASIC (ASICON)	2025
Organizer & Speaker, 1st LLM4EDA Summer School, Fudan University	2024

TEACHING SERVICES

Fudan University

TA for *Design Automation of Electronic Systems Based on LLMs* (Instructor: Prof. Fan Yang)	Spring 2025
TA for *Fundamentals of Digital Circuit Design Automation* (Instructor: Prof. Fan Yang)	Springs 2022, 2023, 2024, 2025
TA for *Basics of C Programming* (Instructor: Prof. Fan Yang)	Autumns 2021, 2022, 2023, 2024
TA for *Basics of Analog Circuits* (Instructor: Prof. Liqing Tong)	Spring 2022
TA for *Fundamentals of Computer Software* (Instructor: Prof. Xuan Zeng)	Spring 2022
Instructor, Weekend & Finals Programming Tutorials, Tengfei College	Autumns 2022, 2023, 2024