ZHENGQI, GAO

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EDUCATION

Massachusetts Institute of Technology Cambridge, USA

Ph.D. in Electrical Engineering and Computer Science Sep 2021 – Jun 2026 (Expected)

- GPA: 5.00/5.00 (Rank: NA); work with Prof. Duane S. Boning
- Research interests: design automation for photonic/electronic integrated circuits and machine learning

Fudan University Shanghai, China

M.S. in Microelectronics and Solid State Electronics Sep 2018 – Jun 2021

- GPA: 3.82/4.00 (Rank: NA); worked with Prof. Jun Tao and Prof. Xin Li (Duke Univ.)
- Research interests: electronic design automation (EDA), and machine learning

B.E. in Microelectronic Science and Engineering Sep 2014 – Jun 2018

- GPA: 3.84/4.00 (Rank: 4/71); selected to Elite Engineering Program (top 5%)
- Relevant coursework: Mathematical Analysis, Probability, Mathematical Statistics and Stochastic Process, Signal and System, Data Structure and Algorithm Design, Design of Analog Integrated Circuits

SELECTED PUBLICATIONS

For the full publication list, please view the Google Scholar page.

1. J. Gu, **Z. Gao**, C. Feng, H. Zhu, R. T. Chen, D. S. Boning, and D. Z. Pan, "NeurOLight: A Physics-Agnostic Neural Operator Enabling Parametric Photonic Device Simulation," *Conference on Neural Information Processing Systems (Neurips)*, 2022. [PDF] [Code]
2. **Z. Gao**, D. Zhang, L. Daniel, and D. S. Boning, "NOFIS: Normalizing Flow for Rare Circuit Failure Analysis," *ACM/IEEE Design Automation Conference* (DAC), 2024. (*MARC* 2024 Best Pitch Award) [PDF][Code]
3. **Z. Gao**, X. Chen, Z. Zhang, C. Y. Lai, U Chakraborty, W. Bogaerts, and D. S. Boning, "Provable Routing Analysis of Programmable Photonics," *IEEE Journal of Lightwave Technology* (*IEEE JLT*). [PDF]
4. **Z. Gao**, Z. Zhang, and D. S. Boning, "Few-Shot Bayesian Performance Modeling for Silicon Photonic Devices Under Process Variation," *IEEE Journal of Lightwave Technology* (*IEEE JLT*). [PDF]
5. Z. Zhang, M. Notaros, **Z. Gao**, U. Chakraborty, J. Notaros, and D. S. Boning, "Impact of process variations on splitter-tree-based integrated optical phased arrays," *Opica Express* (OE). [PDF]
6. **Z. Gao**, X. Chen, Z. Zhang, U. Chakraborty, W. Bogaerts, and D. S. Boning, "Automatic Synthesis of Light Processing Functions for Programmable Photonics: Theory and Realization," *Photonics Research* (highlighted as an editor's pick). [PDF] [Code]
7. **Z. Gao**, X. Chen, Z. Zhang, U. Chakraborty, W. Bogaerts, and D. S. Boning "Automatic Synthesis of Light Processing Functions for Programmable Photonics," *IEEE Photonics Conference (IEEE IPC)*, 2022. [PDF]
8. **Z. Gao**, Z. Zhang and D. S. Boning, "Automatic Synthesis of Broadband Silicon Photonic Devices via Bayesian Optimization," *IEEE Journal of Lightwave Technology (IEEE JLT)*. [PDF][Code]
9. **Z. Gao**, Z. Zhang and D. S. Boning, "Automatic Design of a Broadband Directional Coupler via Bayesian Optimization," *Conference on Lasers and Electro-Optics (CLEO)*, 2022. [PDF]
10. Z. Liang, H. Wang, J. Cheng, Y. Ding, H. Ren, **Z. Gao**, Z. Hu, D. S. Boning, X. Qian, S. Han, W. Jiang, and Y. Shi "Variational Quantum Pulse Learning," *IEEE International Conference on Quantum Computing and Engineering (IEEE QCE)*, 2022. [PDF]

ADDITIONAL INFORMATION

- **Internship Experiences:** Baidu Inc., Shanghai QiZhi AI Institute, Nvidia
- **Independent Reviewer**: IEEE TCAD, Neurips, Optica Express, etc.,
- **OPTSys Seminar Series:** A monthly online seminar series inviting to discuss advances in optics and photonics
- **PRML Solution Manual** (Github 900+ stars)