

# Qingbin Li

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## EDUCATIONS

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**Shanghai Jiao Tong University**

Sep. 2023 – Jun. 2026

- M.Eng. in Electronic Science and Technology
- Core Courses: CMOS RFIC Design, RF System Design, Semiconductor Physics and Devices

**Xi'an Jiaotong University**

Sep. 2018 – Jun. 2022

- B.Eng. in Information Engineering
- Core Courses: Signals and Systems, Digital Signal Processing, Principles of Communication

## ACADEMIC PAPERS

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- **Qingbin Li** and Jian Pang, "An Area-Efficient 20-100-GHz Phase-Invariant Switch-Type Attenuator Achieving 0.1-dB Tuning Step in 65-nm CMOS," in 2025 18th IEEE United Conference on Millimeter Waves and Terahertz Technologies (UCMMT), vol. Volume1, 2025, pp. 1–3.
- **Qingbin Li**, Yifu Li, Zheng Wang, Xu Luo, Xinyu Sui, Rui Wang, Yuchao Mei, and Jian Pang, "A 0.14mm<sup>2</sup> Mixed-Type True-Time Delay Circuit Based on Slow-Wave Transmission Lines Covering 52.8ps for 5G/B5G Carrier Aggregation." (Under Review)
- Zheng Wang, Yifu Li, Yuchao Mei, Xinyu Sui, **Qingbin Li**, Xu Luo, Rui Wang, Dongxin Ni, Jian Pang, "A 24-GHz CMOS Transformer-Based Three-Tline Series Doherty Power Amplifier Achiving 39% PAE," 2025 8th International Conference on Integrated Circuits, Technologies and Applications (ICTA). (Accepted)

## RESEARCH EXPERIENCES

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**RF Circuit Optimization Based on Bayesian Optimization and Gaussian Process (Leader)**

Aug. 2025 – Present

- Built Gaussian Process (GP) surrogate models to approximate ADS simulations for RF circuit optimization with limited samples and high evaluation cost.
- Introduced a multi-objective Bayesian optimization (MOBO) framework to systematically approximate the performance upper bound under a limited sample budget, enabling comprehensive multi-metric optimization for RF circuit design.
- Integrated the Expected Hypervolume Improvement (EHVI) acquisition function into multi-objective Bayesian optimization to efficiently approximate the Pareto front.

**Mixed-Type True-Time-Delay (TTD) Circuit for Wideband 5G/B5G Phased-Array Systems (Leader)**

Aug. 2024 – Mar. 2025

- Applied TTD in wideband systems to mitigate the beam squint issue. Cascaded a reflection-type TTD with two switch-type TTDs in the mixed-type TTD to achieve a wide

delay range and fine tuning resolution.

- Implemented the reflection-type TTD using an ultra-compact two-turn 90° coupler and tunable reflective loads. Implemented a switched TTD based on an all-pass network.
- Used slow-wave transmission lines (SW-TLs) to improve delay efficiency per unit area.

#### **A Compact Low-Phase-Error Wideband Attenuator for mm-Wave Phased-Array Systems (Leader)** Feb. 2024 – Jul. 2024

- Implemented an attenuator chip based on the T-type structure in a 65-nm CMOS process.
- Added capacitor to the shunt branch of the T-type structure in the large attenuation unit to reduce phase error between the reference and attenuation states.
- Adopted a simplified T-type structure in the small attenuation unit. Implemented resistors in the small attenuation unit using metal lines to reduce parasitic capacitance, thereby minimizing amplitude and phase errors and improving operating bandwidth.

#### **AWARDS**

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- Best Student Paper Honorable Mention Award, 18th United Conference on Millimeter Waves and Terahertz Technologies, 2025.
- Champion, the "Fellow Townsmen Cup" Basketball Tournament, Xi'an Jiaotong University, 2022.

#### **PATENT APPLICATION**

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- **Qingbin Li**, Jian Pang, "A True Time-Delay Circuit Utilizing Slow-Wave Transmission Line," Patent Pending, China National Intellectual Property Administration (CNIPA), 2025.

#### **SKILLS**

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**Softwares:** ADS, Cadence, HFSS, Python, PyTorch, Origin, Microsoft Office.

**Languages:** Mandarin (native), English

**Hobbies:** Basketball, Football, Badminton