WEIHAN LONG

Chengdu, China 611731
+86 187 7369 0020 ◇ weihanlong@std.uestc.edu.cn

EDUCATION

University of Electronic Science and Technology of China (UESTC)
M.Phil., Electronic Science & Technology **(A+)** *Expected Jun 2027*
Focus: Silicon photonic device design & integrated photonics
B.Sc., Electronic Science & Technology **(A+)** *2024*
Overall GPA: 3.82/4.0

HONORS & AWARDS

Honorary Bachelor's Degree **(Top 2 in the College)**, UESTC *2024*
Honorary Research Certificate, UESTC *2024*
Outstanding Graduate, UESTC *2024*
Top 5% – IEEEXtreme Programming Competition, IEEE *2021*

SKILLS

Lumerical & COMSOL	Fast simulation, analysis, and optimization of silicon photonic devices.
Waveguide design	Custom cross-sections and periodic cells to excite targeted modes.
Fabrication	UV/e-beam lithography, dry/wet etching, PECVD and sputtering.
Python & MATLAB	Rapid iteration and multi-objective optimization.

RESEARCH EXPERIENCE

National Engineering Research Center of Electromagnetic Radiation Control Materials, Chengdu, China
Polarization Independent Magneto-Optical Waveguide via Vortex Resonance *Sep 2024 – Present*

- Designed periodic waveguide structure to excite vortex-like electric field resonances.
- Solved polarization sensitivity by enabling equal magneto-optical interaction with TE/TM modes.
- Introduced vortex-resonator concept achieving polarization-agnostic nonreciprocal phase shift effect on-chip.

Topological Multimode Beam Combining & Steering *Mar 2023 – Nov 2023*

- Leveraged topological multimode states in photonic crystals for robust beam combining.
- Solved scattering loss via power-orthogonal excitation and introduced tunable topological waveguides.
- Reached 93% combination efficiency and dynamic steering for high-power, multi-channel systems.

Broadband Magneto Optical Isolators & Circulators on Si_3N_4 *Mar 2022 – Nov 2022*

- Designed Mach–Zehnder isolators with dispersion compensation to equalize phase shifts.
- Solved narrowband limits by engineering waveguide dispersion for broadband nonreciprocal operation.
- Achieved 28 dB isolation, 29–90 nm bandwidth, <3 dB loss—enabling scalable WDM, LiDAR, and datacom.

PUBLICATION

Jing Y, Yang Y, **Long W** , Zhang T, Wu D, Wang J, Xiong Z, Chen N, Wang M, Chan CT, Yu Y, Bi L, Chen Y.
Experimental Realization of Highly Efficient Beam Combination and Steering via Topological Multimode
Laser & Photonics Reviews (2025)

SERVICE

Member, IEEE UESTC Student Branch, participated in organizing academic seminars and student outreach programs.