

Yumeng Lu

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<https://yumenglu417.github.io/> — LinkedIn

EDUCATION

Tianjin University

Tianjin, China

B.E. in Measurement & Control Technology and Instruments (Major)

Aug. 2022 - Jul. 2026

◦ **GPA:** 3.88/4.0 — **Average Score:** 91.84/100 — **Rank:** 8/131

◦ **Thesis title:** Silicon-based III-V group micro-laser design

B.E. in Computer Science and Technology (Minor)

Nov. 2023 - Jul. 2026

◦ **Thesis title:** Research on reliable transmission mechanism of RDMA in lossy network

PUBLICATIONS

† Equal contribution, # Corresponding author

Conference Proceedings

[C1] Ruijie Wu[†], **Yumeng Lu[†]**, Ziyihui Wang[#], Bahetiguli Asilibieke, Jianying Jing, Kun Liu, Junfeng Jiang, Yu-Cheng Chen, Jing Wang and Tiegen Liu. "Hydrogel whispering-gallery mode microresonators for toxic heavy metals detection in Chinese herbs", Proc. SPIE 13722, Advanced Sensor Systems and Applications XV, 137220J (**Oral Presentation**)

[C2] **Yumeng Lu[†]**, Yaxin Fu[†], Bahetiguli Asilibieke[#], Ziyihui Wang[#], Junfeng Jiang, Tianhua Xu, Jing Wang and Tiegen Liu. "High-sensitive biosensor for urea detection in urine via hydrogel whispering-gallery mode microresonators", Proc. SPIE 13721, Optics in Health Care and Biomedical Optics XV, 137210T (**Oral Presentation**)

RESEARCH EXPERIENCE

• Research on On-chip Lasers, The Chinese University of Hong Kong

Hong Kong SAR

Research Intern, advised by Prof. Ying Xue

Jul. 2025 - Sep. 2025

◦ Designed two kinds of external reflectors for lateral grown III-V lasers based on Silicon or Silicon Nitride, geometrical outline includes Micro Loop Mirror (MLM) and S-bend.

◦ Designed coupler between the active region and external reflector based on Sub-wavelength grating.

◦ Conducted simulations for mode profile, and reflectivity of passive reflectors by Lumerical FDTD; Monitored and evaluated the mode overlap, and coupling efficiency of coupler by Lumerical FDE.

• Research on Flexible Electronics, Tianjin University

Tianjin, China

Undergraduate Researcher, advised by Prof. Wenxing Huo

Apr. 2024 - May 2025

◦ Cleaned wafers, and processed thin film layers with different ratios of ZnO/SnO on the Si/SiO₂ wafers by Atomic Layer Deposition (ALD) using metallic precursors.

◦ Fabricated and patterned multiple devices on a single wafer through photolithography, and annealing processes.

◦ Conducted test on hysteresis curve of devices by adjusting various parameters, and the devices exhibiting memory-like hysteresis curves were identified.

◦ Utilized MATLAB to record, and process experimental data, plotted the curves that derived above by Origin.

• Research on Image Processing, Tianjin University

Tianjin, China

Undergraduate Researcher, advised by Prof. Xiaodong Zhang

Oct. 2024 - Dec. 2024

◦ Investigated the limitations of traditional PC and GPU-based image processing, where transmission bandwidth between sensors and PC often restricts speed. Hereby, we proposed to use FPGA for acceleration.

◦ Developed C++ algorithm for feature recognition, with a focus on the centroid extraction of multiple white-light interference fringe images, followed by reconstruction of the 3D surface based on Matlab.

◦ Transplanted the algorithm to FPGA for simulation and board-level test to evaluate feasibility, then compared the processing speeds of hardware-based method with the conventional approach.

• Research on RDMA (Minor), Tianjin University

Tianjin, China

Research Assistant, advised by Prof. Wenxin Li

Jun. 2024 - Jun. 2025

◦ Focused on datacenter and network-related research, aimed to address transmission bandwidth limitations

in communicating acceleration.

- Conducted literature review, helped PhD students find ideas for improvement, discussed the recent advancements in network areas, communication protocols, and FPGA implementations.

AWARDS & HONORS

- Professor Guoxiong Zhang Scholarship, School of Precision Instrument and Optoelectronics Engineering 2025
- Outstanding Student of Class 2026 (Supervisor: Prof. Ziyihui Wang), Tianjin University 2025
- Mitacs Globalink Research Internship, Queen's University & Mitacs Inc. 2025
- National Scholarship, Ministry of Education of the People's Republic of China 2024
- Rianlon Scholarship, Tianjin University 2023
- Merit Student, Tianjin University 2023 - 2025

SKILLS

- **Software:** Lumerical FDTD, Zemax, Proteus, Vivado, Keil, Origin, L^AT_EX
- **Programming:** C++, Matlab, Verilog, SQL, Python
- **Languages:** English (IELTS 7.0 (6.0)), Chinese Mandarin (Native)

EXTRA-CURRICULAR SERVICES

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|------------------------|---|
| • Student Union | School of Precision Instrument and Optoelectronics Engineering |
| President | <i>Sep. 2024 - Sep. 2025</i> |
| Minister | <i>Sep. 2023 - Sep. 2024</i> |
| Officer | <i>Sep. 2022 - Sep. 2023</i> |