

Yumeng Lu

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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 Tiegeng Liu. "Hydrogel whispering-gallery mode microresonators for toxic heavy metals detection in Chinese herbals", Proc. SPIE 13722, Advanced Sensor Systems and Applications XV, 137220J (**Oral Presentation**)

[C2] Yumeng Lu[†], Yaixin Fu[†], Bahetiguli Asilibieke[#], Ziyihui Wang[#], Junfeng Jiang, Tianhua Xu, Jing Wang and Tiegeng 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

• 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>