Yumeng Lu

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EDUCATION

The Chinese University of Hong Kong **Hong Kong SAR, China**
PhD student in the Department of Electronic Engineering *Aug. 2026 - present*

Tianjin University **Tianjin, China**
B.E. in Measurement & Control Technology and Instruments (Major) *Aug. 2022 - Jun. 2026*
- **GPA:** 3.89/4.0 | **Average Score:** 91.8/100 | **Rank:** 8/131
- **Thesis title:** Silicon-based III-V group micro-laser design

B.E. in Computer Science and Technology (Minor) *Nov. 2023 - Jun. 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 herbals", Proc. SPIE 13722, Advanced Sensor Systems and Applications XV, 137220J **(Oral Presentation)**

[C2] **Yumeng Lu†**, Yaoxin 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/SiO_2 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

- China Instrument and Control Society (CIS) Scholarship, CIS 2026
- Outstanding Graduate, Tianjin University 2026
- Postgraduate Studentship, The Chinese University of Hong Kong 2026
- 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, LaTeX
- **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 *Sep. 2024 - Sep. 2025*

Minister *Sep. 2023 - Sep. 2024*

Officer *Sep. 2022 - Sep. 2023*