# Ching Ting LEUNG

Links to my: Github Linkedin Email Google Scholar Personal Page

## Education

**University of Notre Dame** Expected graduation on 2030
*Ph.D Student in Chemical Engineering*

**Hong Kong University of Science and Technology** Graduated on 2025
*B.Eng. in Chemical Engineering (Research Option), Artificial Intelligence*
Awards: 2023 Fall Dean's List, 2024 Spring Dean's List, Top 1% Students in Departments 2023
Bachelor Thesis: Benchmarking and Training Large Language Models (LLMs) in Learning Chemical Engineering Knowledge

## Publications, Preprints and Conference Presentations

**Leung, C. T.**, Chen, Y., & Gao, H. (2025, November). Bridging Visual Chemistry and Language Intelligence: Extracting Scattered Information from Chemical Reaction Mechanism Images into Structured Data. Poster, in 2025 AIChE Annual Meeting. AIChE.

Chen, Y., **Leung, C. T.**, & Gao, H. (2025, November). Chemeagle: An Mllm-Powered Multi-Agent System for Multimodal Chemical Information Extraction. Oral, in 2025 AIChE Annual Meeting. AIChE.

Chen, Y., **Leung, C. T.**, Yu, B., Sun, J., Huang, Y., Li, L., ... & Gao, H. (2025). A Multi-Agent System for Information Extraction from the Chemical Literature. arXiv preprint arXiv:2507.20230.

Chen, Y., **Leung, C. T.**, Sun, J., Huang, Y., Li, L., Chen, H., & Gao, H. (2025). Towards Large-scale Chemical Reaction Image Parsing via a Multimodal Large Language Model. arXiv preprint arXiv:2503.08156.

Chen, Y., **Leung, C. T.**, Huang, Y., Sun, J., Chen, H., & Gao, H. (2024). MolNexTR: a generalized deep learning model for molecular image recognition. Journal of Cheminformatics, 16(1), 141.

**Leung, C. T.**, Chen, Y., & Gao, H. (2024, October). Optical Molecular Recognition from Chemical Reaction Mechanism Images. Poster, in 2024 AIChE Annual Meeting. AIChE.

**Leung, C. T.**, Chen, Y., & Gao, H. (2024). SMiCRM: A benchmark dataset of mechanistic molecular images. arXiv preprint arXiv:2407.18338.

## Research Experience

**McKelvey International Student Research Internship** | *Washington University in St.Louis* 2024 Summer
Supervised by Prof. Chenguang Wang

**Undergraduate Researcher** | *Hong Kong University of Science and Technology* 2023 Fall – 2025 Summer
Supervised by Prof. Hanyu Gao

**Research Assistant** | *Auiset Biotechnology Co. Ltd* 2023 Summer – 2025 Spring
Designing protocols and conducting experiments for nanoparticle synthesis for testing the effectiveness of antibodies

## Research Projects

**Large Language Models in Atmospheric Composition Analysis** 2024 Summer
- Associated with McKelvey International Student Research Internship Program, WashU
- Refining current LLMs for air quality prediction and propose quantitative methods in predicting its movements

**A Deep Learning Approach of Reaction Mechanism Information Extraction** 2023 Fall - 2025 Summer
- Associated with Undergraduate Researcher, HKUST
- Created three benchmark datasets that effectively targeted the characteristic of molecular images from reaction mechanisms
- Proposed a pipeline in automatic reaction mechanism information extraction

## Teaching Experience

**Graduate Teaching Assistant** | *University of Notre Dame* 2025 Fall - Current

- Chemical Engineering lab II (2025 Fall)

**Undergraduate Teaching Assistant** | *Hong Kong University of Science and Technology* 2022 Fall - 2025 Spring

- Calculus I-III (2022 Fall - 2023 Spring)
- Process and Product Design Principles (2023 Fall)
- Introduction to Food Science (2024 Spring)
- Chemical and Biological Reaction Engineering (2024 Fall)
- Process Dynamics & Control (2025 Spring)