Jingwen Yang (Anita)

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Education

The Hong Kong Polytechnic University *Sept 2023 – June 2027 (expected)*

BSc (HONS) DATA SCIENCE & ANALYTICS, Minor in Computer Science

- **WGPA**: 3.80 / 4.30
- **Coursework:** Linear Algebra(A+), Data Analytics & Visualization(A+), Multivariable Calculus(A), Statistical Inference(A), Data Structure(A), Fundamentals of AI & Data Science(A), Probability & Distributions(A), Database Systems(A-)...

Stanford University (*Summer Exchange*) *June 2024 – Aug 2024*

- **Coursework:** Machine Learning, Programming Methodology

Research Experience

24/25 Undergraduate Research and Innovation Scheme (URIS) *Sept 2024 – Aug 2026 (expected)*

Supervised by Prof. Lin Wanyu, The Hong Kong Polytechnic University, Department of DSAI

- **Project**: "Physics-Informed Diffusion Model in 3D Molecule Generation"
- **Focus & Goal**: Integrating physical/chemical properties into a latent diffusion model to generate stable 3D molecular structures. Enhancing molecule quality and stability for potential applications in drug discovery and materials science

Research Collaboration on Crystal Tensor Prediction *Sept 2024 – Ongoing*

Supervised by Prof. Lin Wanyu & PhD senior, The Hong Kong Polytechnic University, Department of DSAI

- **Project**: "FAST CRYSTAL TENSOR PROPERTY PREDICTION: A General O(3)-Equivariant Framework Based on Polar Decomposition"
- **Focus & Goal**: Develop an O(3)-equivariant framework for predicting tensor properties of crystalline materials. Use a novel rotation and reflection (R&R) module to reduce computational overhead while maintaining equivariance.
- **Contributions**: Supported to visualize comprehensive workflows for documentation and presentation, assisted to appendix writing by refining technical explanations, and participated in coding-related tasks for follow-up experiments

Projects

Connecting VLM and Causal Reasoning in Medical Image Analysis *Jan 2025 – May 2025(expected)*

Supervised by Prof. Yang Hongxia, The Hong Kong Polytechnic University, Department of Computing

- Developed a framework integrating Vision-Language Models (VLMs) with causal reasoning for medical image analysis. Designed reasoning scenarios to enhance information processing, particularly in tumor image interpretation, aiming to improve diagnostic accuracy and model explainability.

Banquet Management System(Course Project)

- **Contributions**: Designed and implemented the system's functionality, debugged and tested extensively, created test datasets, and authored the user guideline and report samples.

Exploring Spam Classification Models Through Comprehensive Visual Analysis

- **Contributions**: Handled all coding tasks, performed data analysis and visualization, compared models, and prepared project documentation and presentations using Python, scikit-learn, matplotlib...

Scholarships & Activities

- **Hall Academic Scholarship**: Awarded to the top 3 students in GPA from the academic year *June 2024*
- **Research Scholarship**: Undergraduate Research and Innovation Scheme Scholarship *June 2024*

Technologies & Interests

Languages: Mandarin(Native) | English(advanced) | Cantonese(Basic) | TOEFL(99) | GRE(150+170+3.5)

Technologies: Python, C++, SQL, R | Latex, Microsoft Office, Vesta, Photoshop