Hao Chen

CONTACT INFORMATION	West Lafayette, IN, USA	chen4433@purdue.edu
	Google Scholar Homepage	Linkedin

EDUCATION

Purdue University, West Lafayette, IN
Ph.D. in Chemical Engineering   2022 - Present

- Research advisor: Dr. Can Li
- Research expertise: Machine Learning and Mathematical Optimization

University of Cambridge, Cambridge, UK
M.Phil. in Chemical Engineering and Biotechnology   2020 - 2021

University of Nottingham, Nottingham, UK
B.Eng. in Chemical Engineering   2016 - 2020

APPOINTMENTS

Cornell Tech, Cornell University, New York, NY   TBD 2025
Visitor researcher   Prof. Andrea Lodi's Lab

PUBLICATIONS

[1] **Chen, H.**, Constante-Flores, G., Li, C. Physics-informed neural networks with hard linear equality constraints. *Computers & Chemical Engineering 189, 108764.* (2024).

[2] **Chen, H.**, Constante-Flores, G., Li, C. Diagnosing Infeasible Optimization Problems Using Large Language Models. *INFOR: Information Systems and Operational Research, 1–15.* (2024).

[3] Yan, Y., Shin, W.I., Chen, H. et al. A recent trend: application of graphene in catalysis. *Carbon Lett. 31, 177–199* (2021).

CONFERENCE PRESENTATIONS

Chen, H. 2024. Self-supervised Learning for Constrained Optimization with Hard Linear Constraints. Paper presented at the *2024 INFORMS Annual Meeting*, Seattle, WA

Chen, H. 2024. GPU Accelerated Approximation Algorithm for Multi-Parametric Linear Programming. Paper presented at the *2024 AIChE Annual Meeting*, San Diego, CA

Chen, H. 2024. Physics-Informed Neural Networks with Hard Linear Equality Constraints. Paper presented at the *2024 AIChE Annual Meeting*, San Diego, CA

Chen, H. 2024. Diagnosing Infeasible Optimization Problems Using Large Language Models. Paper presented at the *2024 AIChE Annual Meeting*, San Diego, CA

HONORS AND AWARDS

Purdue Graduate Student Government (PGSG) Travel Grants	2024
Graduate Student Travel Grants, School of Chemical Engineering, Purdue University	2024
Nottingham Engineering Excellence Scheme (Top 1.0%), University of Nottingham	2019
British Petroleum Prize, University of Nottingham	2019
Provost's Scholarship (Top 1.5%), University of Nottingham	2018
Dean's Scholarship (Top 10%), University of Nottingham	2017

RESEARCH MENTORING	Zachary Rasmussen (Undergraduate from Utah)	2024 - Present
	Rahul Golder (Undergraduate from IIT)	2023 - 2024
	Soumick Sarker (Undergraduate from IIT)	2023 - 2024

TEACHING EXPERIENCE	*Statistical Modeling and Quality Enhancement (CHE-32000), TA*	Fall 2024
	Momentum Transfer (CHE-37700), TA	Fall 2023

SKILLS
- Programming: Python, Julia
- Frameworks: NumPy, Pandas, PyTorch, SciPy, TensorFlow
- Toolbox: Linux, vim, git