Hao Chen

CONTACT INFORMATION

320 Brown St.
West Lafayette, IN 47906

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EDUCATION

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

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

University of Cambridge, Cambridge, UK
M.Phil. in Chemical Engineering and Biotechnology — Sep 2021

University of Nottingham, Nottingham, UK
B.Eng. in Chemical Engineering — July 2020

APPOINTMENTS

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

TEACHING EXPERIENCE

Purdue University, West Lafayette, IN, USA

Teaching Assistant — Fall 2024
CHE-32000 Statistical Modeling and Quality Enhancement

Teaching Assistant — Fall 2023
CHE-37700 Momentum Transfer

RESEARCH MENTORING

Undergraduate student at Utah ChemE	SURF project	Summer 2024 - Fall 2024
Undergraduate students at IIT ChemE	Remote research	Summer 2023 - Spring 2024

HONORS AND AWARDS

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

PROGRAMMING LANGUAGES

- Machine Learning: Python
- Optimization: Julia

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