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 — 2021

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

APPOINTMENTS

Cornell Tech, Cornell University, New York, NY, USA — 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

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