

Shuyi (Ryan) Chen

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CONTACT

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 shuyic@alumni.cmu.edu

 [shuyiryanchen.github.io](https://github.com/shuyiryanchen)

 [Google Scholar](#)

 [GitHub](#)

EDUCATION

Carnegie Mellon University, Heinz College

Pittsburgh, PA

Ph.D. in Information Systems Management

2024 – Summer 2027 (*expected*)

Advisors: [Shixiang \(Woody\) Zhu](#) and [Ramteen Sioshansi](#)

Master of Information Systems Management (Highest Distinction)

2021 – 2023

The Chinese University of Hong Kong, Shenzhen

Shenzhen, China

B.B.A. (Hons.) in Global Supply Chain and Logistics Management; Minor in Statistics

2017 – 2021

First Class Honours

Visiting Student, University of California, Berkeley

2018

RESEARCH INTERESTS

Methodology: decision-focused learning; robust, chance-constrained, and data-driven optimization; conformal prediction and uncertainty quantification; generative and time-series modeling.

Applications: power-system resilience to wildfires and extreme weather; energy storage and grid operations; trustworthy machine learning.

PUBLICATIONS

*Equal contribution.

JOURNAL ARTICLES

[J1] **Global-Decision-Focused Neural ODEs for Proactive Grid Resilience Management**

[\[arXiv\]](#) [\[code\]](#)

Shuyi Chen, Ferdinando Fioretto, Feng Qiu, Shixiang Zhu.

IEEE Transactions on Smart Grid.

REFEREED CONFERENCE PROCEEDINGS

[C1] **Learning Polyhedral Conformal Sets for Contextual Robust Optimization** [\[arXiv\]](#)

Shuyi Chen*, Wenbin Zhou*, Shixiang Zhu.

Conference on Neural Information Processing Systems (NeurIPS), 2026.

[C2] **Gen-DFL: Decision-Focused Generative Learning for Robust Decision Making**

[\[arXiv\]](#)

Prince Zizhuang Wang, Shuyi Chen, Jinhao Liang, Ferdinando Fioretto, Shixiang Zhu.

International Conference on Learning Representations (ICLR), 2026.

 **IISSE DAIS Track Best Paper Award.**

[C3] **Counterfactual Fairness through Transforming Data Orthogonal to Bias** [\[arXiv\]](#)

[\[code\]](#)

Shuyi Chen, Shixiang Zhu.

ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), Research Track, 2025.

[C4] **Uncertainty-Aware Robust Learning on Noisy Graphs** [\[arXiv\]](#) [\[poster\]](#) [\[code\]](#)

Shuyi Chen, Kaize Ding, Shixiang Zhu.

IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2025.

Short version at the NeurIPS 2023 Workshop on New Frontiers in Graph Learning.

- [C5] **API-Assisted Code Generation for Question Answering on Varied Table Structures** [\[arXiv\]](#)
 Yihan Cao*, Shuyi Chen*, Ryan Liu*, Zhiruo Wang, Daniel Fried.
Conference on Empirical Methods in Natural Language Processing (EMNLP), 2023.

WORKING PAPERS

UNDER REVISION

- [W1] **Enhancing Electricity-System Resilience with Adaptive Robust Optimization and Conformal Uncertainty Characterization** [\[arXiv\]](#) [\[media\]](#)
 Shuyi Chen, Shixiang Zhu, Ramteen Sioshansi.
Minor revision, IEEE Open Access Journal of Power and Energy.
 🏆 **INFORMS ENRE Best Student Paper Award.**

IN PREPARATION

- [W2] **Large-Scale Resilience Planning for Wildfire-Prone Electricity Systems via Adaptive Robust Optimization** [\[arXiv\]](#) [\[poster\]](#) [\[demo\]](#)
 Shuyi Chen, Shixiang Zhu, Ramteen Sioshansi.
To be submitted to European Journal of Operational Research.
- [W3] **The Price of Looking Ahead: Decision-Focused Learning for Model Predictive Control in Energy Storage**
 Shuyi Chen, Shuai Wang, Shixiang Zhu.
In preparation for conference submission. Earlier version: “Balancing Planning Myopia and Forecast Error: Decision-Focused Sequential Learning.”
 🏆 **INFORMS DMDA Workshop Best Paper Finalist (Applied Track).**
- [W4] **Rare-Chance-Constrained Resilience Planning for Power Systems under Wildfires and Cascading Hazards**
 Shuyi Chen, Shixiang Zhu, Ramteen Sioshansi.
In preparation for journal submission.

HONORS & AWARDS

INFORMS DMDA Workshop Best Paper Finalist (Applied Track)	2026
IIE DAIS Track Best Paper Award	2026
INFORMS ENRE Best Student Paper Award	2025
KDD Student Travel Award; NSF Travel Grant (IMSI Workshop)	2025
INFORMS Workshop on Data Science Student Scholarship	2024
PwC Technology Impact Office / CMU Digital Transformation Center Research Fellowship	2023
CUHK Presidential Award (top 10 of 1,200 graduates)	2021

TEACHING

Lecturer, *A/B Testing* (95-819), Heinz College, Carnegie Mellon University 2026
Teaching interests: optimization and operations research; machine learning and data analytics; A/B testing and causal inference; energy and sustainability analytics.

PRESENTATIONS

Young Researchers Workshop, Cornell University	2026
<i>Rare-chance-constrained resilience planning under wildfires and cascading hazards</i>	
HOPE Research Workshop, University of Notre Dame (invited talk)	2026
<i>Large-scale resilience planning for wildfire-prone electricity systems</i>	
ACM SIGKDD Conference, Toronto	2025
<i>Counterfactual fairness through transforming data orthogonal to bias</i>	
NSF/IMSI Workshop on UQ and ML for Complex Physical Systems, Chicago (poster)	2025
<i>Electricity-system resilience with adaptive robust optimization and conformal uncertainty</i>	

INDUSTRY	Argonne National Laboratory	Lemont, IL
EXPERIENCE	Researcher • Developed decision-focused neural ODEs for proactive grid resilience, reducing decision regret by up to 75% versus two-stage baselines [J1]. • Led the 2025 INFORMS DMDA Workshop Data Challenge on extreme-weather power-outage prediction, which drew 54 teams from 31 institutions. ByteDance Data Scientist • Built Prophet-based anomaly detection with statistical residual tests (3% MAPE), flagging three major business anomalies for timely mitigation. • Applied causal inference to Local Services growth interventions, contributing to a 2% increase in overall user activity.	2025 Beijing, China 2023 – 2024
PROFESSIONAL SERVICE	Competition Co-Chair: INFORMS DMDA Workshop Data Challenge (2025); IISE ESD Energy Analytics Challenge (2026). Organizing Committee: YinzOR, Speakers and Talks Committee (2026). Session Chair: INFORMS Energy Systems session (2025). Journal Reviewer: INFORMS Journal on Data Science; Journal of Agricultural, Biological, and Environmental Statistics. Conference Reviewer: NeurIPS; ICML; ICLR; KDD; AISTATS; ICASSP; IEEE PES General Meeting (2023 – 2026).	
REFERENCES	Shixiang (Woody) Zhu (Advisor) Assistant Professor Heinz College, Carnegie Mellon University shixiangzhu@cmu.edu Ferdinando (Nando) Fioretto Associate Professor, Computer Science University of Virginia fioretto@virginia.edu	Ramteen Sioshansi (Advisor) Professor, Engineering and Public Policy Carnegie Mellon University rsioshan@andrew.cmu.edu Feng Qiu Principal Computational Scientist Argonne National Laboratory fqiu@anl.gov