Zeyu (Louis) Liu

Department of Industrial & Management Systems Engineering, West Virginia University
333 Engineering Science Building, 1306 Evansdale Drive,
Morgantown, WV 26506-6107
zeyu.liu@mail.wvu.edu || +1 (304) 293-9436

Education

Doctor of Philosophy, Industrial Engineering
The University of Tennessee, Knoxville, TN, USA *Sept. 2018 – Aug. 2022*
Advisors: Xueping Li and Anahita Khojandi
Thesis: "Optimizing strategic planning with long-term sequential decision making under uncertainty: a decomposition approach"

Bachelor of Management, Information Management & Information Systems
Southeast University, Nanjing, Jiangsu, China *Sept. 2014 – June 2018*

Academic Experience

West Virginia University (WVU)
Department of Industrial & Management Systems Engineering (IMSE)
Assistant Professor *Aug. 2022 – Present*

Award and Honor

First Place, Harvey J. Greenberg Research Award *2022*
INFORMS Computing Society

The Graduate Advancement, Training and Education Program *Aug. 2021 – Aug. 2022*
The University of Tennessee & Oak Ridge National Laboratory

Tennessee Fellowship for Graduate Excellence *Aug. 2018 – Aug. 2022*
The University of Tennessee

Spike Tickle STEM Fellowship *Aug. 2018 – Aug. 2021*
The University of Tennessee

Refereed Paper

1. Rachel Wood-Ponce, Ghada Diab, **Zeyu Liu**, Ryan Blanchette, Jon Hathaway, and Anahita Khojandi (2024). "Developing data-driven learning models to predict urban stormwater runoff volume". *Urban Water Journal*, 1–16.
2. **Zeyu Liu**, Mohammad Ramshani, Anahita Knojandi, and Xueping Li (2023). "Optimal Utilization of Integrated Photovoltaic Battery Systems – An Application in Residential Sector". *IISE Transactions* published online, 1–14.
3. Xudong Wang, **Zeyu Liu**, and Xueping Li (2023). "Optimal Delivery Route Planning for a Fleet of Heterogeneous Drones: A Rescheduling-Based Genetic Algorithm Approach". *Computers & Industrial Engineering*, 109179.

4. Zefeng Lyu, **Zeyu, Liu**, Anahita Khojandi, and Andrew Junfang Yu (2022). "Q-learning And Traditional Methods on Solving The Pocket Rubik's Cube". *Computers & Industrial Engineering* 171, 108452.
5. **Zeyu, Liu**, Xueping Li, and Anahita Khojandi (2022). "The Flying Sidekick Traveling Salesman Problem With Stochastic Travel Time: A Reinforcement Learning Approach". *Transportation Research Part E: Logistics and Transportation Review* 164, 102816.
6. **Zeyu, Liu**, Anahita Khojandi, Xueping Li, Akram Mohammed, Robert L Davis, and Rishikesan Kamaleswaran (2022). "A Machine Learning–Enabled Partially Observable Markov Decision Process Framework for Early Sepsis Prediction". *INFORMS Journal on Computing* to appear.
7. Rodney Kizito, **Zeyu, Liu**, Xueping Li, and Kai Sun (2022). "Multi-stage Stochastic Optimization of Islanded Utility-microgrids Design After Natural Disasters". *Operations Research Perspectives* 9, 100235.
8. Rodney Kizito, **Zeyu Liu**, Xueping Li, and Kai Sun (2021). "Stochastic Optimization of Distributed Generator Location And Sizing in An Islanded Utility Microgrid During A Large-scale Grid Disturbance". *Sustainable Energy, Grids and Networks* 27, 100516.
9. Chuang Liu, Huaping Chen, Xueping Li, and **Zeyu Liu** (2021). "A scheduling decision support model for minimizing the number of drones with dynamic package arrivals and personalized deadlines". *Expert Systems with Applications* 167, 114157.
10. **Zeyu Liu**, Anahita Khojandi, Akram Mohammed, Xueping Li, Lokesh K Chinthala, Robert L Davis, and Rishikesan Kamaleswaran (2021). "HeMA: A Hierarchically Enriched Machine Learning Approach for Managing False Alarms in Real Time: A Sepsis Prediction Case Study". *Computers in Biology and Medicine* 131, 104255.
11. **Zeyu Liu**, Xueping Li, and Anahita Khojandi (2020). "On the k-Strong Roman Domination Problem". *Discrete Applied Mathematics* 285 (15), 227–241.

Refereed Conference Proceedings

1. Hang Woon Lee and **Zeyu Liu** (2023). "A Novel Formulation for the Multi-Stage Satellite Constellation Reconfiguration Problem: Initial Results". *33rd AAS/AIAA Space Flight Mechanics Meeting*. Vol. 1, pp. 1–10.
2. Xudong Wang, Kimon Swanson, **Zeyu Liu**, Gerald Jones, and Xueping Li (2022). "A Simulation-Heuristic Approach to Optimally Design Drone Delivery Systems in Rural Areas". *Proceedings of the 2022 Winter Simulation Conference (WSC)*. Singapore, pp. 1–13.
3. Ahmad Mitoubsi, **Zeyu Liu**, Danny Banks, Anahita Khojandi, Michael Oliver, Daniel Cox, and Roberto Fernandez (2021). "Evaluating the Fitness-to-Drive Using Evoked Visual Responses in Alzheimer's Disease". *43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society*. Virtual, to appear.
4. **Zeyu Liu**, Xueping Li, and Anahita Khojandi (2019). "On the Extension of Schelling's Segregation Model". *Proceedings of the 2019 Winter Simulation Conference (WSC)*. National Harbor, MD, USA, pp. 285–296.

Paper Under Review or Revision

1. **Zeyu Liu**, Xueping Li, and Anahita Khojandi (2024). "Protecting Critical Infrastructure Network From Sequential Attacks: A Novel Framework". Under revision at *IISE Transactions*.

Funded Research – External

PI: **Zeyu Liu** (WVU) $422,300 / $1,900,000
Collaborator: University of Tennessee and Oak Ridge National Laboratory
The U.S. Department of Energy (DOE), Advanced Research Projects Agency-Energy (ARPA-E), Grant DE-AR0001780
"A Cognitive Freight Transportation Digital Twin for Resiliency and Emission Control Through Optimizing Intermodal Logistics (RECOIL)"
Jan. 2024 – June. 2026

Student Advising

- Doctoral Committee Chairship
  - Department of IMSE, WVU
    1. *Mohsen Mehrabiyan*, expected Summer 2027
- Doctoral Committee Membership
  - Department of Mechanical, Materials and Aerospace Engineering, WVU
    1. *Brycen Pearl*, expected 2028
- Master's Committee Chairship
  - Department of IMSE, WVU
    1. *Ayoub Abusalih*, expected Spring 2025
- Master's Committee Membership
  - Department of IMSE, WVU
    1. *Md Hadisur Rahman*, Expected Fall 2025
    2. *Md Rabiul Hasan*, Fall 2023
    3. *Tasmiah Haque*, Spring 2023
- Undergraduate Research Advising
  - *Alexander Zorio*, Fall 2023 – Present

Teaching

- IENG 455: Simulation by Digital Methods - Undergraduate level
  - Fall 2023 (40 students, 3.5/5.0)
- IENG 350: Introduction to Operations Research - Undergraduate level
  - Spring 2023 (32 students, 3.5/5.0), Spring 2023 (24 students, 4.5/5.0)

Service to The Profession

- INFORMS
  - *Committee Member*, Harvey J. Greenberg Research Award, 2024
  - *Organizer*, Diversity, Equity, and Inclusion (DEI) Best Student Paper Award, 2024

  - *Judge*, INFORMS Annual Meeting Poster Competition, 2023
  - *Session Chair*, INFORMS Annual Meeting, 2020 – 2021, 2023 – 2024
- IISE
  - *Session Chair*, IISE Annual Conference & Expo, 2020 – 2022
- Journal Referee
  - *Annals of Operations Research*; *IISE Transactions*; *Optimization Letters*; *Transportation Science Part E: Logistics and Transportation Review*; *Decision Analytics Journal*; *Robotics and Computer-Integrated Manufacturing*

Professional Society Membership

- INFORMS
  - Diversity, Equity, and Inclusion (DEI) Committee, Computing Society (ICS), Decision Analysis Society (DAS), Health Applications Society (HAS), Junior Faculty Interest Group (JFIG)
- IISE
  - Modeling & Simulation Division

Service to Home Institution

- Department of IMSE, WVU
  - *Member*, Undergraduate Academic Affairs Committee, Aug. 2022 – Present
  - *Member*, Industrial Engineering Graduate Program Sub-Committee, Aug. 2022 – Present
  - *Member*, 2022–2023 IMSE Faculty Search Committee, Aug. 2022 – May. 2023