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Updated: 2021-04-25

Education

Ph.D. Candidate, Management Science and Engineering — Apr. 2019 - present
Nanjing University of Aeronautics and Astronautics — Nanjing, China
- Advisor: Prof. Jianjun Zhu
- College of Economics and Management
- Concentrations: Disaster and Emergency Operations Management

Visiting Student, Industrial Engineering — Sep. 2019 - Dec. 2019
Texas State University — San Marcos, U.S.
- Advisor: Dr. Zhijie (Sasha) Dong
- UTIL Lab at Ingram School of Engineering (https://dong.wp.txstate.edu/)
- Research project: *A stochastic optimization approach for prepositioning relief supplies considering lateral transshipment*[3] .
- Funded by Nanjing University of Aeronautics and Astronautics.

M.S., Management Science and Engineering — Sep. 2016 - Apr. 2019
Nanjing University of Aeronautics and Astronautics — Nanjing, China
- Advisor: Prof. Jianjun Zhu
- College of Economics and Management
- Dissertation: *Models and Algorithms for Post Disaster Rescue Route Optimization*

B.S., Industrial Engineering — Sep. 2011 - Jul. 2015
Henan Polytechnic University — Jiaozuo, China
- School of Energy Science and Engineering
- Dissertation: *Analysis and Optimization of the Production Organization Process of a Beverage Manufacturer*

Research Interests

• **Disaster and Emergency Operations Management:** mathematical modeling in disasters and public emergencies operations management incorporating the uncertainty.
• **Optimization Modeling and Algorithms:** especially stochastic optimization and integer optimization.
• **Data-driven modeling in the public-health emergency.**

Skills

50k+ lines of code in **Python** (including the package *gurobipy* for interacting with **Gurobi**, *Pyomo* for optimization modeling, **Matplotlib** for scientific visualization, and *Django* for web development). Solid knowledge of modeling and algorithms for deterministic integer programming and **stochastic programming**. Working proficiency in typesetting by LaTeX. Native in Chinese Mandarin.

Research Experience

Integrated Optimization for Large-scale Natural Disaster Emergency Rescue Location-Routing-Allocation Problem — Jun. 2017 - Nov. 2018
- Project supported by *Foundation of Graduate Innovation Center in Nanjing University of Aeronautics and Astronautics*.

Publications

[3] **Guo,P.,** Dong,Z.S.*, Zhu,J., Hu,S.(working paper). The Nested Logic-based Benders Decomposition for Stochastic Disaster Response Planning with Inter-facility Coordination.
- Methodology: two-stage stochastic programming, vehicle routing problem, (nested) logic-based Benders decomposition.

[2] **Guo,P.,** Zhu,J.*, Wang,H.(2019). Location-routing-allocation Problem with Consolidated Shipping of Heterogeneous Relief Supplies in Post-disaster Rescue. *Systems Engineering - Theory & Practice,* 39(9),2345-2360. (Chinese journal)

[1] **Guo,P.,** Zhu,J.*, Wang,H.(2018). Multi-location Emergency Rescue Route Optimization under the Condition of Natural Disaster Considering Safety and Time Cost. *Systems Engineering,* 36(6),62-70. (Chinese journal)

Honors and Awards

- **2^{nd} Price**, the 2^{nd} National Innovation Competition of Industrial Engineering and Lean Management (**top 3%** of participants) May 2019
  - Name of the Project: *Models and Algorithms for Emergency Rescue Location-Routing Optimization with Stochastic Demand*
- **Outstanding Postgraduate Student** of Nanjing University of Aeronautics and Astronautics (top 20% of postgraduate student) Jul. 2019
- **3^{rd} Price**, the 15^{th} China Post-Graduate Mathematical Contest in Modeling (top 30% of participants) Dec. 2018
- **National Scholarship** for Graduate Students by Ministry of Education of the P.R.C (**top 0.5%** of graduate student) Oct. 2018
- **3^{rd} Price**, the 2018 NUAA Post-Graduate Mathematical Contest in Modeling (top 30% of participants) Jun. 2018
- **3^{rd} Price**, the 14^{th} China Post-Graduate Mathematical Contest in Modeling (top 30% of participants) Dec. 2017

Open Source Activities

VRP2E https://github.com/phguo/VRP2E Jan. 2018
- A coevolutionary-algorithm solver for multi-objective two-echelon vehicle routing problems.

LRP2E-instances https://github.com/phguo/LRP2E-instances Jan. 2018
- Instances data for 2-echelon vehicle routing problem (VRP2E) with resource constraints.