

## 郭鹏辉 · Penghui Guo

Nanjing University of Aeronautics and Astronautics (NUAA)  
29 Jiangjun Avenue  
Nanjing Jiangsu, 211106 China

Email: guopenghui@outlook.com  
Homepage: <https://guo.ph>  
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EDUCATION	<p><b>Ph.D. Candidate</b>, Management Science and Engineering <b>Nanjing University of Aeronautics and Astronautics</b> ◦ Advisor: Prof. Jianjun Zhu ◦ College of Economics and Management ◦ Concentrations: Disaster and Emergency Operations Management</p> <p><b>Visiting Student</b>, Industrial Engineering <b>Texas State University</b> ◦ Advisor: Dr. Zhijie (Sasha) Dong ◦ UTIL Lab at Ingram School of Engineering (<a href="https://dong.wp.txstate.edu/">https://dong.wp.txstate.edu/</a>) ◦ Research project: <i>A stochastic optimization approach for prepositioning relief supplies considering lateral transshipment</i><sup>[3]</sup>. ◦ Funded by Nanjing University of Aeronautics and Astronautics.</p> <p><b>M.S.</b>, Management Science and Engineering <b>Nanjing University of Aeronautics and Astronautics</b> ◦ Advisor: Prof. Jianjun Zhu ◦ College of Economics and Management ◦ Dissertation: <i>Models and Algorithms for Post Disaster Rescue Route Optimization</i>, click <a href="#">here</a> for full text.</p> <p><b>B.S.</b>, Industrial Engineering <b>Henan Polytechnic University</b> ◦ School of Energy Science and Engineering ◦ Dissertation: <i>Analysis and Optimization of the Production Organization Process of a Beverage Manufacturer</i></p>	<p>Apr. 2019 - present Nanjing, China</p> <p>Sep. 2019 - Dec. 2019 San Marcos, U.S.</p> <p>Sep. 2016 - Apr. 2019 Nanjing, China</p> <p>Sep. 2011 - Jul. 2015 Jiaozuo, China</p>
RESEARCH INTERESTS	<ul style="list-style-type: none"><li>• <b>Disaster and Emergency Operations Management:</b> mathematical modeling in disasters and public emergencies operations management incorporating the uncertainty.</li><li>• <b>Optimization Modeling and Algorithms:</b> especially stochastic optimization and integer optimization.</li><li>• <b>Data-driven modeling in the public-health emergency.</b></li></ul>	
SKILLS	50k+ lines of code in <b>Python</b> (including the package <i>gurobipy</i> for interacting with <b>Gurobi</b> , <i>Pyomo</i> for optimization modeling, <b>Matplotlib</b> for scientific visualization, and <i>Django</i> for web development). Solid knowledge of modeling and algorithms for deterministic integer programming and <b>stochastic programming</b> . Working proficiency in typesetting by $\text{\LaTeX}$ . Native in Chinese Mandarin.	
RESEARCH EXPERIENCE	<p><b>Integrated Optimization for Large-scale Natural Disaster Emergency Rescue Location-Routing-Allocation Problem</b> ◦ Project supported by <i>Foundation of Graduate Innovation Center in Nanjing University of Aeronautics and Astronautics</i>.</p>	<p>Jun. 2017 - Nov. 2018</p>
PUBLICATIONS	<p>[3] <b>Guo,P.</b>, 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.</p> <p>[2] <b>Guo,P.</b>, Zhu,J.*, Wang,H.(2019). Location-routing-allocation Problem with Consolidated Shipping of Heterogeneous Relief Supplies in Post-disaster Rescue. <i>Systems</i></p>	

*Engineering - Theory & Practice*, 39(9),2345-2360. (Chinese journal, click [here](#) for full text.)

[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, click [here](#) for full text.)

#### HONORS AND AWARDS

- **2<sup>nd</sup> Price**, the 2<sup>nd</sup> 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<sup>rd</sup> Price**, the 15<sup>th</sup> 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<sup>rd</sup> Price**, the 2018 NUAA Post-Graduate Mathematical Contest in Modeling (top 30% of participants) Jun. 2018
- **3<sup>rd</sup> Price**, the 14<sup>th</sup> 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.