

# Jiang Mingrui

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## Educations

**M. Sc., Nanjing Tech University (NTU), Nanjing, Jiangsu** 2020.09 ~ till now

- **Major** : Heating, Ventilation, and Air Conditioning (HVAC), College of Urban Construction
- **Advisor** : Prof. Hao Cai
- **Average Score** : 87.8/100

**B. Sc., Nanjing Tech University (NTU), Nanjing, Jiangsu** 2018.09 ~ 2020.06

- **Major** : Building Environment and Energy Application Engineering, College of Urban Construction
- **GPA** : 3.2/4.0

**Army Engineering University, Nanjing, Jiangsu** 2015.09 ~ 2018.08

- **Major** : National Defense Engineering, College of National Defense Engineering
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## Research Projects

[1] Research on robot source localization in indoor environment with natural ventilation based on particulate matter source feature

**Project Leader**; the Postgraduate Research & Practice Innovation Program of Jiangsu Province.

[2] A multi-robot localization method for time-varying sources in indoor environment with mechanical ventilation

**Project Leader**; the National Students' platform for innovation and entrepreneurship training program, No.201910291029.

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## Publications

[1] **Jiang, M.**, Liao, Y., Guo, X., Cai, H.<sup>\*</sup>, Jiang, W., Yang, Z., ... & Liu, F. (2022). A comparative experimental study of two multi-robot olfaction methods: Towards locating time-varying indoor pollutant sources. *Building and Environment*, 207, 108560. [JCR Q1]

[2] **Jiang, M.**, Liao, Y., Jiang, W., Yang, Z., Cai, H.<sup>\*</sup>, Feng, Q., ... & Yang, Y. (2020). Experimental study on locating periodic indoor contaminant source by using multiple robots. *Building Science* (04), 46 – 52+85. [CSDN]

[3] Feng, Q., Cai, H.<sup>\*</sup>, Yang, Y., Xu, J., **Jiang, M.**, Li, F., ... & Yan, C. (2020). An experimental and numerical study on a multi-robot source localization method independent of airflow information in dynamic indoor environments. *Sustainable Cities and Society*, 53, 101897. [JCR Q2]

[4] Yang, Y., Zhang, B., Feng, Q., Cai, H.<sup>\*</sup>, **Jiang, M.**, Zhou, K., ... & Li, X. (2019). Towards locating time-varying indoor particle sources: Development of two multi-robot olfaction methods based on whale optimization algorithm. *Building and Environment*, 166, 106413. [JCR Q1]

[5] Feng, Q., Yang, Y., Deng, Y., Cai, H.<sup>\*</sup>, **Jiang, M.**, Lu, J., ... & Zhang, B. (2021). Experimental and numerical validation on a multi-robot source localization method for dynamic indoor environment. *Environmental Engineering* (02), 73 – 81. [CSDN]

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## Patents

- [1] A mobile robot for indoor 3D multi-environmental parameter field reconstruction  
Dechang Li, Hao Cai, Suwan Zhou, **Mingrui Jiang**, Gaogui Bao, Yu Wang, Biao Zhang;  
*China Invention Patent*, Publication Patent Number: CN113295214A.
- [2] A distribution map construction method based on improved two-dimensional steady-state kernel DM+V/W  
Hao Cai, Suwan Zhou, Dechang Li, Gaogui Bao, **Mingrui Jiang**, Yu Wang, Biao Zhang;  
*China Invention Patent*, Publication Patent Number: CN113240804A.
- [3] A mobile robot detection system and method for a clean room  
Xun Guo, **Mingrui Jiang**; Hao Cai, Axiang Chen, Yu Liao, Biao Zhang, Yu Wang;  
*China Invention Patent*, Publication Patent Number: CN113190016A.
- [4] A traceability robot that collects gas concentration and integrates airflow information for optimization  
Zongxin Li, Qilin Feng, Zheli Xing, **Mingrui Jiang**, Yangbo Long, Fei Liu, Zhou Yang, Hao Cai;  
*China Utility Model Patent*, Publication Patent Number: CN213674139U.
- [5] A steady-state environment parameter field reconstruction optimization algorithm based on the two-dimensional kernel DM+V algorithm  
Hao Cai, Dechang Li, Suwan Zhou, Gaogui Bao, Yu Wang, **Mingrui Jiang**, Biao Zhang;  
*China Invention Patent*, Publication Patent Number: CN112989636A.
- [6] A device for simulating human breathing gas source  
Wenqing Jiang, **Mingrui Jiang**, Yu Liao, Zhou Yang, Yibin Yang, Hao Cai, Yu Wang;  
*China Utility Model Patent*, Publication Patent Number: CN211124654U.
- [7] A generation device for simulating the leakage of a container for storing dangerous gases  
Zhou Yang, Yu Liao, **Mingrui Jiang**, Wenqing Jiang, Qilin Feng, Hao Cai, Yu Wang;  
*China Utility Model Patent*, Publication Patent Number: CN210719534U.
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## Honors and Awards

- [1] **Merit Postgraduate** (2021.12)
- [2] **Special-Class Academic Scholarship** (2021.09)
- [3] **Second-Class Academic Scholarship** (2020.09)
- [4] **Third Prize**, China-US Young Maker Competition, 2021 (The National Competition)  
**Mingrui Jiang**, Xun Guo, Yu Liao, Axiang Chen, Biao Zhang
- [5] **Third Prize**, International Contest of Innovation (iCAN), 2021 (The National Competition)  
**Mingrui Jiang**, Xun Guo, Yu Liao, Biao Zhang, Axiang Chen
- [6] **Third Prize**, The 7th Jiangsu "Internet +" College Student Innovation & Entrepreneurship Competition (Main Track), 2021  
Xun Guo, **Mingrui Jiang**, Yu Liao, Axiang Chen, Biao Zhang, Dingyou Hu, Xiaoyu Feng, Xiaoqian Gao
- [7] **First Prize**, The 4th Jiangsu Association of Refrigeration Youth Member Innovation & Entrepreneurship Competition, 2021  
Xun Guo, **Mingrui Jiang**, Yu Liao, Axiang Chen, Biao Zhang, Xiaoqian Gao, Dingyou Hu, Xiaoyu Feng