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Ph.D., Assistant Professor

IEEE member

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About Me

I am now an assistant professor at the College of Computer Science, Sichuan University, Chengdu China. I received my Ph.D. degree from Sichuan University (06/2019), major in Computer Science. I was a visiting scholar at the Department of Civil and Environmental Engineering, University of Wisconsin-Madison, USA, from 11/2017 to 11/2018, supervised by Prof. Bin Ran. Before my Ph.D. career, I was a software engineering in Wisisoft Co. Ltd., Chengdu, China for two years.

RESEARCH INTERESTS

- Air traffic management, traffic safety
- Machine learning, deep learning
- Speech recognition, speech processing
- Computer vision
- Intelligent Transportation Systems

EDUCATION

- 09/2015-06/2019 **Ph.D., Sichuan University**, Chengdu, China
Computer Science (supervised by Prof. Jianwei ZHANG)
- 11/2017-11/2018 **Visiting Ph.D., University of Wisconsin-Madison**, Madison, USA
Transportation Engineering (supervised by Prof. Bin RAN)
- 09/2010-07/2013 **M. E., Sichuan University**, Chengdu, China
Mechanical Engineering (supervised by Prof. Dejun REN)
- 09/2006-07/2010 **B. E., Harbin University of Science and Technology**, Harbin, China
Mechanical Engineering

WORKING

- 06/2019-present **Assistant Professor, Sichuan University**, Chengdu, China
Computer Science
- 07/2013-09/2015 **Software Engineer, Wisisoft Co. Ltd.**, Chengdu, China
Air Traffic Control Systems



PROFESSIONAL ACTIVITIES

Reviewer

- IEEE Transactions on Intelligent Transportation Systems
- Knowledge-based Systems (outstanding reviewer in 2018)
- IEEE Access
- Aircraft Engineering and Aerospace Technology
- Journal of Navigation
- Journal of Aerospace Information Systems
- PeerJ Computer Science

Member

IEEE,

PROJECTS

- 01/2021-12/2023 **National Natural Science Foundation of China, PI.**, Research on the multilingual speech recognition on small corpus towards complex real-time air traffic control environment.
- 01/2020-12/2021 **Sichuan Scientific R&D Project, PI.**, The key techniques for the computer vision tasks
- 01/2020-12/2020 **Open Fund of Sichuan University, PI.**, Real-time traffic dynamic sensing from pilot-controller conversation using a deep learning approach.
- 01/2021-12/2024 **National Natural Science Foundation of China-Key project, Investigator.** Research on theory and method of collaborative safety monitoring of ATC based on machine learning in complex environment
- 01/2019-12/2021 **National Natural Science Foundation of China, Investigator.** Research on key technologies of air traffic control safety monitoring based on deep learning
- 11/2017-11/2018 **Research in TOPS lab, University of Wisconsin-Madison, Investigator.** Design and evaluation of Connected and Automated Vehicle & Highway systems

SOCIAL LINKS



GitHub homepage: <https://sculyi.github.io/>



ResearchGate: https://www.researchgate.net/profile/Yi_Lin130



Google Scholar: <https://scholar.google.com/citations?hl=zh-CN&user=7RapKRUAAAAJ>



ORCID: <https://orcid.org/0000-0002-7194-5023>



Publons: <https://publons.com/researcher/4110451/yi-lin/>

PUBLICATIONS

1. **Yi Lin**, Dongyue Guo, Jianwei Zhang, Zhengmao Chen, and Bo Yang, A unified framework for multilingual speech recognition in air traffic control systems [J], *IEEE Transactions on Neural Networks and Learning Systems*, 2020, DOI: 10.1109/TNNLS.2020.3015830.



2. **Yi Lin**, Linchao Li, Hailong Jing, Bin Ran, Dongye Sun, Automated traffic incident detection with a smaller dataset based on generative adversarial networks [J], *Accident Analysis & Prevention*, 2020, 144: 105628. DOI: 10.1016/j.aap.2020.105628.
3. **Yi Lin**, Linjie Deng, Zhengmao Chen, Xiping Wu, Jianwei Zhang, and Bo Yang, A real-time ATC safety monitoring framework using a deep learning approach [J], *IEEE Transactions on Intelligent Transportation Systems*, 2020, 21(11): 4572-4581. DOI: 10.1109/TITS.2019.2940992.
4. **Yi Lin**, Qin Li, Bo Yang, Zhen Yan, Huachun Tan, and Zhengmao Chen, Improving speech recognition models with small samples for air traffic control systems [J], *NeuroComputing*, 2020.
5. **Yi Lin**, Jianwei Zhang, Hong Liu, Deep Learning based Short-term Air Traffic Flow Prediction Considering Temporal-spatial Correlation [J]. *Aerospace Science and Technology*, 2019, 93: 105113, DOI: 10.1016/j.ast.2019.04.021.
6. **Yi Lin**, Jianwei Zhang, Bo Yang, Hong Liu and Liping Zhao, An optimal routing strategy for transport networks with minimal transmission cost and high network capacity [J]. *PHYSICA A: STATISTICAL MECHANICS AND ITS APPLICATIONS*, 2019, 521: 551-561. DOI: 10.1016/j.physa.2019.01.064.
7. **Yi Lin**, Xianlong Tan, Bo Yang, Kai Yang, Jianwei Zhang and Jing Yu, Real-time Controlling Dynamics Sensing in Air Traffic System [J]. *Sensors*, 2019, 19(3): s19030679. DOI: 10.3390/s19030679.
8. Bo Yang, Xianlong Tan, Zhengmao Chen, Bing Wang, Dan Li, Zhongping Yang, Xiping Wu, **Yi Lin***, ATCSpeech: a multilingual pilot-controller speech corpus from real Air Traffic Control environment [C], *Annual Conference of the International Speech Communication Association 2020*, 399-405. DOI: 10.21437/Interspeech.2020-1020.
9. **Yi Lin**, Jianwei Zhang and Hong Liu, An algorithm for trajectory prediction of flight plan based on relative motion between positions [J], *Frontiers of Information Technology & Electronic Engineering*, 2018, 19(7): 905-916. DOI: 10.1631/FITEE.1700224.
10. **Yi Lin**, Bo Yang, Jianwei Zhang, and Hong Liu, Approach for 4-D Trajectory Management Based on HMM and Trajectory Similarity [J]. *Journal of Marine Science and Technology*, 2019, 27(3): 246-256, DOI: 10.6119/JMST.201906_27(3).0007.
11. Linchao Li, **Yi Lin***, Bowen Du, Fan Yang, Bin Ran, Real-time traffic incident detection based on a hybrid deep learning model [J], *Transportmetrica A: Transport Science*, 2020, DOI: 10.1080/23249935.2020.1813214.
12. Hong Liu, **Yi Lin***, Zhengmao Chen, Dongyue Guo, Jianwei Zhang, Hailong Jing, Research on the air traffic flow prediction using a deep learning approach [J]. *IEEE Access*, 2019, 7(1): pp.148019-148030. DOI: 10.1109/ACCESS.2019.2945821.
13. Shanmin Yang, **Yi Lin***, Jianwei Zhang, Triangular patch-based texture fusion for multi-view 3D face model [C], *10th International Conference on Graphics and Image Processing (ICGIP 2018)*, Chengdu China, Dec. 12-14, 1028, DOI: 10.1117/12.2524160.
14. Zhengmao Chen, Dongyue Guo and **Yi Lin***, A Deep Gaussian Process-Based Flight Trajectory Prediction Approach and Its Application on Conflict Detection [J], *Algorithms*, 2020, 13(11), 293. DOI: 10.3390/a13110293.



15. **Yi Lin**, Jianwei Zhang, Hong Liu, Study on algorithm for flight plan pairing based on SSR code-set [J], *Journal of Sichuan University (Engineering Science Edition)*, 2016, 48(005): 98-104. DOI: 10.15961/j.jsuese.2016.05.015.
16. **Yi Lin**, Jianwei Zhang, Xiping Wu, Yu Liu, Study on Algorithm for Flight Trajectory Prediction Based on GMM [J], *Advanced Engineering Sciences*, 2018, 050(004): 104-109. DOI: 10.15961/j.jsuese.201700541
17. Zhengmao Chen, **Yi Lin***, Bo Yang, Study on Algorithm for Rerouting Based on Historical Data [J], *Advanced Engineering Sciences*, 2018, 050(004): 110-115. DOI: 10.15961/j.jsuese.201700538.
18. Zhengmao Chen, Hong Liu, **Yi Lin***, Study on Algorithm for Flight Conflict Detection Based on Deep Gaussian Process [J], *Journal of University and Electronic Science and Technology of China*, 2020.
19. **Yi Lin**, Bo Yang, Kai Yang, Xiping Wu, Jianwei Zhang, Zhongping Yang, and Jun Yang. A Real-Time ATC Safety Monitoring Approach Based on Deep Learning [C], *The 8th Conference of CCATM, Chinese Society of Aeronautics and Astronautics*, Beijing, China, Dec. 13-14, 2017.
20. De-ning Luo, **Yi Lin**, Jian-wei Zhang, GPU-based multi-slice per pass algorithm in interactive volume illumination rendering [J], *Frontiers of Information Technology & Electronic Engineering*, 2020. DOI: 10.1631/FITEE.2000214.
21. Hainan Huang, **Yi Lin**, Jiancheng Weng, Jian Rong, Xiaoming Liu, Identification of inelastic subway trips based upon weekly station sequence data: An example from the Beijing subway [J], *Sustainability*, 2018, 10(12): 4725. DOI: 10.3390/su10124725.
22. Xiaohong Chen, Hongliang Wan, **Yi Lin**, Bin Ran. Impacts of land-use related geo-information on metro use [C]. *98th Transportation Research Board (TRB) Annual Meeting*. Jan 13-17, 2019 Washington DC, USA.
23. Linjie Deng, Yanxiang Gong, **Yi Lin**, Jingwen Shuai, Xiaoguang Tu, Yufei Zhang, Zheng Ma, Mei Xie. Detecting multi-oriented text with corner-based region proposals [J]. *NeuroComputing*, 2019, 334:134-142. DOI: 10.1016/j.neucom.2019. 01.013.
24. Shihan Tan, Jianwei Zhang, **Yi Lin**, Hong Liu, Menglong Yang, Wenyi Ge, Adaptive volumetric light and atmospheric scattering [J], *PLoS One*, 2020, 15(11): e0242265, DOI: 10.1371/journal.pone.0242265.
25. Linjie Deng, Yanxiang Gong, Xinchun Lu, **Yi Lin**, Zheng Ma, Mei Xie. STELA: A Real-Time Scene Text Detector with Learned Anchor [J]. *IEEE Access*, 2019, 7(1):153400-153407. DOI: 10.1109/ACCESS.2019.2948405.

PATENTS

1. **Yi Lin**, Bo Yang, Jianwei Zhang, A speech recognition method and device for small samples in the ATC domain. (Chinese, 202010663698.0)
2. **Yi Lin**, Bo Yang, Jianwei Zhang, A multilingual speech recognition method and device in the ATC domain with a complete end-to-end mechanism. (Chinese, 202011147669.5)
3. Bo Yang, Xiaohui Wang, Guoyi Liu, Bing Wang, **Yi Lin**, Xiping Wu, A method and device for enhancing situational awareness of the air-ground communication (Chinese, 201911296392.X)



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4. Bo Yang, Xianlong Tan, Xiaohui Wang, Bing Wang, **Yi Lin**, Xiping Wu, An ATC instruction issuing system and method based on speech recognition and text-to-speech synthesis (Chinese, 201911296327.7)

HONORS

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| Jul. 2017 | China Scholarship Council (CSC) scholarships for visiting scholar |
| Dec. 2017 | Best Paper of the 8th conference of CCATM, Chinese Society of Aeronautics and Astronautics |