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博士后研究员

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教育背景

- 博士　　机械与航空航天工程　　2018 年 8 月 – 2023 年 5 月
  亚利桑那州立大学，美国亚利桑那州坦佩
- 硕士　　机械与航空航天工程　　2017 年 8 月 – 2018 年 6 月
  亚利桑那州立大学，美国亚利桑那州坦佩
- 学士　　机械设计制造及其自动化　　2013 年 9 月 – 2017 年 6 月
  华中科技大学，中国湖北武汉

工作经历

- 得克萨斯大学奥斯汀分校，航空航天工程与工程力学系　　美国得克萨斯州奥斯汀
  博士后研究员　　2024 年 7 月至今
- 泰雷兹美国公司（Thales USA）　　美国加利福尼亚州圣何塞
  机器学习工程师　　2023 年 6 月 – 2024 年 7 月

荣誉与奖励

2025	美国联邦航空管理局航空安全机器学习/人工智能数据挑战赛第二名	弗吉尼亚州麦克林
2023	亚利桑那州立大学机械与航空航天工程系杰出研究生科研奖	亚利桑那州坦佩
2015	华中科技大学机械科学与工程学院优秀学业表现奖	中国武汉

期刊论文

（仅列出 **Pang, Y.*** 为第一作者或通讯作者的论文。* 表示通讯作者。其他作者未在此列出。）

在研论文

1. **Pang, Y.***, Kendall, A., Clarke, J. (2026). OODA loop for wildfire monitoring and suppression task.
2. Liang, J., **Pang, Y.***, & Clarke, J. (2026). An optimization formulation for last-mile delivery using ring widget structure.
3. **Pang, Y.***, Shin, Y., Barclay, W., Adams, C., Singhose, W., Kendall, A., Clarke, J. (2026). A Knowledge-Enhanced Analytical Approach to Crane Safety Bridging Accident Reports and Physics Simulations. 拟投稿至 *Reliability Engineering & System Safety*.
4. **Pang, Y.***, Kendall, A., Clarke, J. (2026). Impact of the Performance of Autonomy and Communication Subsystems on the Level-of-Safety of Partially Autonomous Machine Systems. 拟投稿至 *AIAA Journal*.

审稿中论文

1. **Pang, Y.**, Tian, Y., Zhao, X., Hu, J., Clarke, J., Jacobsen, H. (2026). A Hybrid Framework for Explainable Aviation Risk: Causal Chain Extraction from Safety Reports with Physics-Based Failure Quantification and Interventional Analysis. 已投稿至 *IEEE Transactions on Systems, Man, and Cybernetics: Systems*.

2. **Pang, Y.***, Kendall, A., Clarke, J. (2026). Noncommunicative Collision Avoidance in Dense Air Traffic With Induced-Conflict Analysis. 已投稿至 *AIAA Journal of Guidance Control and Dynamics*.

3. **Pang, Y.***, Clarke, J. (2026). Trajectory-Based Co-Optimization of Arrival Scheduling and Descent Path Design in the Terminal Maneuvering Area. 已投稿至 *Aerospace Science and Technology*.

4. **Pang, Y.***, Clarke, J. (2026). Fuel-Optimal Stochastic Optimization of Delayed Deceleration and Continuous Descent Approach Procedures under Wind Uncertainty. 已投稿至 *AIAA Journal of Aircraft*.

5. **Pang, Y.**, Hu, J., Iyer, H., Zhao, X., Clarke, J. (2026). V-STAR: VectorNet-Augmented Spatio-Temporal Attention and Reasoning for Procedure-Aware Aircraft Trajectory Prediction. 已投稿至 *IEEE Transactions on Intelligent Transportation Systems*.

6. Dong, Z., **Pang, Y.***, Clarke, J. (2026). A Probabilistic Runway Occupancy Conflict Alerting Framework for Real-Time Runway Incursion Detection from ATC Speech and ADS-B. 已投稿至 *AIAA Journal of Aerospace Information Systems*.

7. Liang, J., **Pang, Y.***, & Clarke, J. (2026). Optimizing Same-Day Delivery: A Framework Incorporating Vehicle Capacity and Time Guarantees. 已投稿至 *International Journal of Systems Science: Operations & Logistics*.

已发表期刊论文

1. **Pang, Y.***, Delahaye, D., Clarke, J. (2027). Trajectory-Based Optimization for Air Traffic Control in the Terminal Maneuvering Area. *Transportation Research Part C*.

2. Porcayo, A., **Pang, Y.***, Thomas, M., & Clarke, J. (2026). Data-Driven Runway and Taxiway Exits Prediction of Landing Aircraft: A Case Study at Hartsfield-Jackson Atlanta International Airport. *Journal of Air Transport Management*.

3. **Pang, Y.***, Kendall, A., Clarke, J. (2026). Modeling the Impact of Communication and Human Uncertainties on Runway Capacity in Terminal Airspace. *Journal of Air Transport Management*.

4. **Pang, Y.***, Kendall, A., Clarke, J. (2026). The Reliability of Remotely Piloted Aircraft System Performance under Aeronautical Communication Uncertainties. *Reliability Engineering & System Safety*.

5. **Pang, Y.***, Kendall, A. P., Porcayo, A., Barsotti, M., Jain, A., Clarke, J. (2026). From Voice to Safety: Language AI Powered Pilot-ATC Communication Understanding for Airport Surface Movement Collision Risk Assessment. *Transportation Research Part C: Emerging Technologies*, 184, p.105540.

6. Xu, Q., **Pang, Y.**, & Liu, Y. (2025). Data-driven governing equation identification of near terminal air traffic flow dynamics. *Journal of Air Transport Management*.

7. Xu, Q., **Pang, Y.**, & Liu, Y. (2024). Dynamic airspace sectorization with machine learning enhanced workload prediction and clustering. *Journal of Air Transport Management*.

8. Xu, Q., **Pang, Y.**, Zhou, X., & Liu, Y. (2024). PIGAT: Physics-Informed Graph Attention Transformer for Air Traffic State Prediction. *IEEE Transactions on Intelligent Transportation Systems*.

9. **Pang, Y.**, Zhao, P., Hu, J., & Liu, Y. (2024). Machine Learning-Enhanced Aircraft Landing Scheduling under Uncertainties. *Transportation Research Part C: Emerging Technologies*, 158, p.104444.

10. Zhang, L., Wang, M., Ding, Y., Wan, T., Qi, B., **Pang, Y.** (2023). FBC-ANet: A Semantic Segmentation Model for UAV Forest Fire Images Combining Boundary Enhancement and Context Awareness. *Drones*, 7(7), 456.

11. Rathnakumar, R., **Pang, Y.**, & Liu, Y. (2023). Epistemic and aleatoric uncertainty quantification for crack detection using a Bayesian Boundary Aware Convolutional Network. *Reliability Engineering & System Safety*, 109547.

12. Hu, J., Xu, Z., Wang, W., Qu, G., **Pang, Y.**, & Liu, Y. (2023). Decentralized graph-based multi-agent reinforcement learning using reward machines. *Neurocomputing*, 126974.

13. Xu, Q., **Pang, Y.**, & Liu, Y. (2023). Air Traffic Density Prediction using Bayesian Ensemble Graph Attention Network (BEGAN). *Transportation Research Part C: Emerging Technologies*.

14. **Pang, Y.**, Hu, J., Lieber, C., Cooke, N., & Liu, Y. (2023). Air Traffic Controller Cognitive Workload Level Prediction using Conformal Dynamical Graph Learning. *Advanced Engineering Informatics*, 57, p.102113.

15. Huang, J., **Pang, Y.**, Zhao, X., Liu, Y., & Yan, H. (2022). Posterior Regularized Bayesian Neural Network Incorporating Soft and Hard Knowledge Constraints. *Knowledge-Based Systems*, 249, p.109047.

16. Hu, J., Wang, Y., **Pang, Y.**, & Liu, Y. (2022). Optimal maintenance scheduling under uncertainties using Linear Programming-enhanced Reinforcement Learning. *Engineering Applications of Artificial Intelligence*, 109, p.104655.

17. Wei, H., Yao, H., **Pang, Y.**, & Liu, Y. (2022). Fracture Pattern Prediction with Random Microstructure using Physics-Informed Deep Neural Networks. *Engineering Fracture Mechanics*, 108497.

18. **Pang, Y.**, Zhao, X., Hu, J., Yan, H., & Liu, Y. (2022). Bayesian Spatio-Temporal Graph Transformer Network (B-Star) for Multi-Aircraft Trajectory Prediction. *Knowledge-Based Systems*, 249, p.108998.

19. **Pang, Y.**, Zhao, X., Yan, H., & Liu, Y. (2021). Data-driven trajectory prediction with weather uncertainties: A Bayesian deep learning approach. *Transportation Research Part C: Emerging Technologies*, 130, p.103326.

20. Wang, Y., **Pang, Y.**, Chen, O., Iyer, H. N., Dutta, P., Menon, P. K., & Liu, Y. (2021). Uncertainty quantification and reduction in aircraft trajectory prediction using Bayesian-Entropy information fusion. *Reliability Engineering & System Safety*, 107650.

21. Wang, Y., **Pang, Y.**, Gorceski, S., Kostiuk, P., Mohen, M. T., Menon, P. K., & Liu, Y. (2021). A Voice Communication-Augmented Simulation Framework for Aircraft Trajectory Simulation. *IEEE Transactions on Intelligent Transportation Systems*.

会议论文与学术报告

1. Bhujel, S., **Pang, Y.**, Snyder, P., Tang, C., Hu, J. (2026). Aerodynamic Effects of Fuselage-Package Separation Distance on UAV Performance. In AIAA AVIATION 2026 Forum. DOI: 10.2514/6.2026-4760

2. **Pang, Y.**, Delahaye, D., Clarke, J. (2026). Geometric Trajectory Optimization for TRACON Arrivals: An NLP Approach with ATC Vectoring Maneuver Modeling. *Annual Modeling and Simulation Conference 2026*.

3. Momit, M. A., Jiang, W., Hussain, B. Z., Ammar, M., Bhujel, S., **Pang, Y.**, ... & Hu, J. (2026). Deep Q-Network With Lagrangian Relaxation for Autonomous Aircraft Landing. In AIAA SCITECH 2026 Forum (p. 1983).

4. Rathnakumar, R., Liu, Y., & **Pang, Y.** (2025). Bayesian Approach for Uncertainty Quantification of Neural Networks-Based Crack Diagnostics. In AIAA SCITECH 2025 Forum (p. 1959).

5. Xu, Q., **Pang, Y.**, Zhang, Z., & Liu, Y. (2022). Physics-Based Learning for Aircraft Waiting Time Prediction. In *AIAA AVIATION 2022 Forum*, p.3826.

6. **Pang, Y.**, Xu, N., & Liu, Y. (2022). Robust Satellite Image Classification with Bayesian Deep Learning. In *2022 Integrated Communication, Navigation and Surveillance Conference (ICNS)*.

7. **Pang, Y.**, Cheng, S., Hu, J., & Liu, Y. (2021). Evaluating the Robustness of Bayesian Neural Networks Against Different Types of Attacks. In *CVPR 2021 Workshops on Adversarial Machine Learning in Real-World Computer Vision Systems*. [PDF]

8. **Pang, Y.**, Wang, Y., & Liu, Y. (2020). Probabilistic Aircraft Trajectory Prediction with Weather Uncertainties using Approximate Bayesian Variational Inference to Neural Networks. In *AIAA AVIATION 2020 Forum*, p.2897.

9. **Pang, Y.**, & Liu, Y. (2020). Conditional Generative Adversarial Networks (CGAN) for Aircraft Trajectory Prediction considering weather effects. In *AIAA Scitech 2020 Forum*, p.1853.

10. **Pang, Y.**, & Liu, Y. (2020). Probabilistic Aircraft Trajectory Prediction Considering Weather Uncertainties Using Dropout As Bayesian Approximate Variational Inference. In *AIAA Scitech 2020 Forum*, p.1413.

11. **Pang, Y.**, Hu, J., Cheng, S., & Liu, Y. (2019, September). Aircraft trajectory prediction using LSTM neural network with embedded convolutional layer. In *11th Annual Conference of the Prognostics and Health Management Society, PHM 2019*. Prognostics and Health Management Society.

12. **Pang, Y.**, Yao, H., Hu, J., & Liu, Y. (2019). A Recurrent Neural Network Approach for Aircraft Trajectory Prediction with Weather Features From Sherlock. In *AIAA Aviation 2019 Forum*, p.3413.

13. Wang, Y., **Pang, Y.**, Liu, Y., Dutta, P., & Yang, B. J. (2019). Aircraft Trajectory Prediction and Risk Assessment Using Bayesian Updating. In *AIAA Aviation 2019 Forum*, p.2936.

14. Zhao, X., Yan, H., Li, J., **Pang, Y.**, & Liu, Y. (2019, September). Spatio-temporal Anomaly Detection, Diagnostics, and Prediction of the Air-traffic Trajectory Deviation using Convective Weather. In *Annual Conference of the PHM Society*, Vol. 11.

美国专利

1. Yongming Liu, **Yutian Pang**, and Jueming Hu. *Systems and Methods for Machine Learning-Enhanced Aircraft Landing Scheduling Under Uncertainties*.

2. Yongming Liu, **Yutian Pang**, and Jueming Hu. *Systems and Methods for Air Traffic Controller Workload Level Prediction using Conformalized Dynamical Graph Learning*.

3. Yongming Liu, Qihang Xu, **Yutian Pang**. *Systems and Methods for Dynamic airspace sectorization with machine learning enhanced workload prediction and clustering*.

特邀报告

1. INFORMS 年会，*Evaluation of Near-Terminal Operation Performance under Uncertainties in High-Density Airspace*。“Innovative Approaches to Efficient Airspace Management”分会场，2025 年 10 月，

美国佐治亚州亚特兰大。

2. INFORMS 年会，*Machine Learning Based Aircraft Trajectory Prediction With Historical Data*。“Advances in Data-Driven Air Traffic Flow Management”分会场，2021 年 10 月，美国加利福尼亚州阿纳海姆。

项目申请经历

（列出庞雨田发起、撰写或协助获得资助的项目申请）

1. 美国国家科学基金会 NSF 26-512：Unlocking Dataset Value for AI-Enabled Scientific Discovery（AI Datasets），规划资助（Planning Grant）。**评审中**。*20* 万美元。
2. NASA NAMS-2 任务：ACERO 山火空中交通管理扩展项目。**评审中**。*10* 万美元。
3. NASA NAMS-2 任务：ACERO 山火空中交通管理。**已获资助**（协助获得 NASA 资助）。*10* 万美元。
4. 美国交通研究委员会机场合作研究计划（ACRP）。未获立项。*40* 万美元。
5. NASA 大学领导力计划（ULI）第 9 轮，方向 5：全系统实时安全保障（In-Time System-Wide Safety Assurance）。未获立项。*500* 万美元。
6. 2024 年美国联邦航空管理局航空安全机器学习/人工智能挑战赛。**已获资助**。*2* 万美元。

学术服务

1. CVPR “Perception Beyond the Visible Spectrum”研讨会技术程序委员会委员，2024 年至今。
2. *Computer Systems Science and Engineering* 期刊青年编委，2023 年至今。

学生指导

得克萨斯大学奥斯汀分校

1. Cameron Jobson，计算机科学本科生，在读。
2. Viraj Singhee，计算机科学本科生，在读。
3. Jianhua Liang，航空航天工程博士生，在读。已向高水平期刊投稿两篇。
4. Alex Porcayo，航空航天工程硕士，2025 年毕业。已在高水平期刊发表论文一篇。

亚利桑那州立大学

1. Rahul Rathnakumar，机械与航空航天工程博士，2024 年毕业。
2. Qihang Xu，机械与航空航天工程博士，2024 年毕业。

审稿工作

担任航空航天、机械、交通运输、人工智能、工业工程与运筹学、计算机科学与计算机工程等领域 50 余个期刊的审稿人，包括 Aerospace Science and Technology、Chinese Journal of Aeronautics、AIAA Journal of Aerospace Information Systems、AIAA Journal of Aircraft、ACM Computing Surveys、Computers in Industry、Information Fusion、Reliability Engineering & System Safety、Transportation Research Part C/D/E/F、IEEE TITS/TAES 等。