

Yutian Pang, PhD

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Postdoctoral Fellow

University of Texas at Austin, Department of Aerospace Engineering & Engineering Mechanics

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EDUCATION

- Ph.D., Mechanical and Aerospace Engineering, 08/2018-05/2023
Arizona State University, Tempe, AZ
- M.S., Mechanical and Aerospace Engineering, 08/2017-06/2018
Arizona State University, Tempe, AZ
- B.S., Mechanical Design, Manufacturing, and Automation, 09/2013-06/2017
Huazhong University of Science and Technology, Wuhan, China

PROFESSIONAL EXPERIENCE

- UT Austin, Department of Aerospace Engineering & Engineering Mechanics
Postdoctoral Research Fellow Austin, TX
07/2024 – present
- Stealth Healthcare Agentic AI Startup
Co-founder, CTO Austin, TX
03/2025 – present
- Thales USA
Machine Learning Engineer San Jose, CA
06/2023 – 07/2024

HONORS AND AWARDS

2025	2nd Place in FAA ML/AI Data Challenge for Aviation Safety	McLean, VA
2023	Outstanding Graduate Research Award of ASU MAE	Tempe, AZ
2015	Outstanding Academic Performance Award of HUST MSE	Wuhan, CN

JOURNAL PUBLICATIONS

(Pang, Y.* indicates I am the corresponding author)

Working Papers

1. Liang, J., **Pang, Y.***, & Clarke, J. (2026). An optimization formulation for last-mile delivery using ring widget structure.
2. **Pang, Y.***, Kendall A., Clarke, J. (2026). A Reactive Control Law for Aircraft Collision Avoidance and Its Capacity Limits.
3. **Pang, Y.***, Kendall A., Clarke, J. (2026). Communication and Autonomy Level Tradeoff for Autonomous Systems Resource Allocation.

Articles Under Review

(Submitted journal manuscripts for which **Pang, Y.*** is either the first author or the corresponding author. Working papers not listed.)

1. **Pang, Y.**, Tian, Y., Xie, J., Zhao, X., Hu, J., Jacobsen, H., Clarke, J. (2026). A Hybrid Framework for Explainable Aviation Risk: Causal Chain Extraction from Safety Reports with Physics-Based Failure Quantification and Counterfactual Analysis. To be submitted to *Advanced Engineering Informatics*.
2. **Pang, Y.***, Clarke, J. (2026). Trajectory-Based Co-Optimization of Arrival Scheduling and Descent Path Design in the Terminal Maneuvering Area. Submitted to *Aerospace Science and Technology*.
3. **Pang, Y.***, Clarke, J. (2026). Fuel-Optimal Stochastic Optimization of Delayed Deceleration and Continuous Descent Approach Procedures under Wind Uncertainty. Submitted to *AIAA Journal of Aircraft*.
4. **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. Submitted to *Transportation Research Part C*.
5. 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. Submitted to *AIAA Journal of Aerospace Information Systems*.
6. **Pang, Y.***, Delahaye, D., Clarke, J. (2026). Trajectory-Based Optimization for Air Traffic Control in the Terminal Maneuvering Area. Submitted to *Transportation Research Part C*.
7. Liang, J., **Pang, Y.***, & Clarke, J. (2026). Optimizing Same-Day Delivery: A Framework Incorporating Vehicle Capacity and Time Guarantees. Submitted to *International Journal of Systems Science: Operations & Logistics*.

Published Journal Articles

1. 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*.
2. **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*.
3. **Pang, Y.***, Kendall, A., Clarke, J. (2026). The Reliability of Remotely Piloted Aircraft System Performance under Aeronautical Communication Uncertainties. *Reliability Engineering & System Safety*.
4. **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.
5. Xu, Q., **Pang, Y.**, & Liu, Y. (2025). Data-driven governing equation identification of near terminal air traffic flow dynamics. *Journal of Air Transport Management*.
6. Xu, Q., **Pang, Y.**, & Liu, Y. (2024). Dynamic airspace sectorization with machine learning enhanced workload prediction and clustering. *Journal of Air Transport Management*.
7. 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*.
8. **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.

9. 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.
10. 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.
11. 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.
12. Xu, Q., **Pang, Y.**, & Liu, Y. (2023). Air Traffic Density Prediction using Bayesian Ensemble Graph Attention Network (BEGAN). *Transportation Research Part C: Emerging Technologies*.
13. **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.
14. 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.
15. 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.
16. 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.
17. **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.
18. **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.
19. 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.
20. 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*.

CONFERENCE PROCEEDINGS & PRESENTATIONS

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.

U.S. PATENTS

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*.

INVITED TALKS

1. INFORMS Annual Conference, *Evaluation of Near-Terminal Operation Performance under Uncertainties in High-Density Airspace*. Innovative Approaches to Efficient Airspace Management, Oct. 2025, Atlanta, GA.
2. INFORMS Annual Conference, *Machine Learning Based Aircraft Trajectory Prediction With Historical Data*. Advances in Data-Driven Air Traffic Flow Management, Oct. 2021, Anaheim, CA.

PROPOSAL EXPERIENCE

(Listing proposals Yutian Pang as the Major Initiator/Writer)

1. NASA NAMS-2 Task: ACERO Wildfire Air Traffic Management. **Awarded.** \$ 100K.
2. Airport Cooperative Research Program, Transportation Research Board. Not selected. \$ 400K.
3. NASA ULI Round 9, Thrust 5: In-Time System-Wide Safety Assurance. Not selected. \$5M.
4. 2024 FAA Machine Learning/Artificial Intelligence Challenge for Aviation Safety. **Awarded.** \$20K.

SYNERGISTIC ACTIVITIES

1. Technical Program Committee for CVPR workshop on Perception Beyond the Visible Spectrum, 2024-current.
2. Early Career Editorial Board Member for journal *Computer Systems Science and Engineering*, 2023-current.

MENTORING SERVICES

UT Austin

1. Cameron Jobson, B.S. in Computer Science. Ongoing.
2. Viraj Singhee, B.S. in Computer Science. Ongoing.
3. Jianhua Liang, Ph.D. in Aerospace Engineering. Ongoing. Two top journal submitted.
4. Alex Porcayo, M.S. in Aerospace Engineering, Graduated 2025. Two top journal published.

ASU

1. Rahul Rathnakumar, PhD, MAE, Graduated 2024.
2. Qihang Xu, PhD, MAE, Graduated 2024.

PEER REVIEWER

Peer reviewer for 50+ journals in aerospace, mechanical, transportation, AI, IE/OR, and CS/CE, including Aerospace Science and Technology, Chinese Journal of Aeronautics, AIAA Journal of Aerospace Information Systems, AIAA Journal of Aircraft, Computers in Industry, Information Fusion, Reliability Engineering & System Safety, Transportation Research Part C/D/E/F, IEEE TITS/TAES, etc.