Jeffrey Xu

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EDUCATION

UNIVERSITY OF KANSAS
Ph.D. Aerospace Engineering
Expected: Spring 2026 | GPA: 4.0

UNIVERSITY OF KANSAS
B.S. Aerospace Engineering
Spring 2021 | GPA: 3.78

COURSEWORK

GRADUATE
Applied Optimal Controls
Machine Learning
Nonlinear Dynamical Systems
Introduction to Flight Test Engineering
Optimal Estimation
Structural Design for Small UAS

SKILLS

PROGRAMMING
- Python
- MATLAB/Simulink
- Robotic Operating Software (ROS)
- C++ (ArduPilot)
- Ubuntu OS
- Git

COMPUTER MODELING
- Advanced Aircraft Analysis (AAA)
- Siemens NX

DATA VISUALIZATION
- Adobe Photoshop
- GNU Image Manipulation Program (GIMP)
- Tableau

COMMUNICATION
- LaTeX
- MS Office
- Mandarin Chinese

EXPERIENCE

GRADUATE RESEARCH ASSISTANT | Dept. of Aerospace Engineering, University of Kansas
Expected: Spring 2022 – Spring 2026 | Lawrence, KS
- Research focus on certifiable, learning, and evolving artificially intelligent aircraft autonomy for urban air mobility deployment.
- Project lead on multiple government-funded research projects aimed at aerospace innovation and development — mainly FAA & NASA.
- Design and implementation of novel guidance, navigation, and control systems (linear and nonlinear) for unmanned aerial systems (UAS) in Python/ROS environment.
- Flight test lead of small fixed-wing UAS running custom autonomous systems operating in Python/ROS environment.
- Funded through Madison & Lila Self Graduate Fellowship

RESEARCH PROJECTS

UAS Wake Turbulence and Flutter Analysis - A35
Q4 2020 - Q4 2022 | FAA Research Project | University of Kansas
- A long-term large-scale study into identifying the severity of UAS in response to wake vortex encounters with the goal of quantifying UAS behavior in unstable and nonlinear flight envelopes.
- Assessing and quantifying the risk involved with UAS and GA aircraft sharing airspace by flight testing autonomous aircraft through artificially produced wake vortices.
- Advising FAA in developing proper regulations to maximize safety of UAS deployment in nation airspace.

Multi-Reference Aircraft Guidance Logic
2018-2019 | Individual Research | University of Kansas
- Developed a novel guidance logic for fixed-wing autonomous UAS which eliminated path overshoot and drastically improved tracking on complex paths in presence of external disturbances.
- Work was published in Springer Journal of Intelligent & Robotic Systems in 2022.
- US Patent No. 62/872,684
- Funded by NASA grants NNX15AJ97H and 80NSSC19C0102

SELECTED PUBLICATIONS

- **Jeffrey Xu**, Aaron McKinnis, Shawn Keshmiri, *et al.*, "Flight Test of the Novel Fixed-Wing Multireference Multiscale LN Guidance Logic for Complex Path Following," *Journal of Intelligent & Robotic Systems*, 105, 3 (2022).
  doi: 10.1007/s10846-022-01660-x

- **Jeffrey Xu**, and Shawn Keshmiri, "Dubins-Based Autolanding Procedure for Fixed-Wing UAS," *International Conference on Unmanned Aircraft Systems (ICUAS)*, 2021, pp. 146-154.
  doi: 10.1109/ICUAS51884.2021.9476882

- **Jeffrey Xu**, Thomas Le Pichon, *et al.*, "Bio-Inspired Predator-Prey Large Spatial Search Path Planning," *2020 IEEE Aerospace Conference*, 2020, pp. 1-6.
  doi: 10.1109/AERO47225.2020.9172365