Stanford

Mahdi Al-Husseini

Ph.D. Student in Aeronautics and Astronautics, admitted Summer 2025

Bio

BIO

Active-duty captain and HH-60M pilot in command in the US Army, licensed professional engineer, registered patent agent, and aeronautics PhD student at Stanford University (SISL). 30+ patents and patent applications. I research multiagent system models and algorithms to improve medical evacuation, search and rescue, and wildfire surveillance and suppression operations.

HONORS AND AWARDS

- Paul & Daisy Soros Fellow, Paul & Daisy Soros Foundation (2025)
- Knight-Hennessy Scholar, Stanford University (2025)
- Deployed (AI) Application Award, Innovative Applications of Artificial Intelligence (IAAI-25) (2025)
- Airbus Robert M. Leich Aviation Award (Unit), C/3-25 Aviation Regiment (2023)
- Collegiate Invention Competition Finalist, Georgia Tech, Stanford University (2019, 2021)
- Major General Greene Individual Innovation Award, Army Futures Command (2021)

PATENTS

- Mahdi Al-Husseini. "United States Patent 12136277 Collection, processing, and output of flight information method, system, and apparatus"
- Mahdi Al-Husseini. "United States Patent 12170025 System and method for calculation and display of formation flight Info on augmented reality display"
- Mahdi Al-Husseini. "United States Patent 12456265 System and method for calculation and display of formation flight information on augmented reality display device"
- Mahdi Al-Husseini. "United States Patent 20230117935 Device for stabilizing a hoisted object"
- Mahdi Al-Husseini. "United States Patent 20230344831 System and method for identifying and authenticating uniformed personnel"
- Mahdi Al-Husseini. "United States Patent 20260070663 System and method for authenticating and visualizing phases of a jumpmaster personnel inspection process"
- Mahdi Al-Husseini. "United States Patent 12462720 Graduation cap with wirelessly controlled cold- cathode tube matrix display", Nov 4, 2025
- Mahdi Al-Husseini. "United States Patent 12462720 Graduation cap with wirelessly controlled cold- cathode tube matrix display", Nov 4, 2025
- Mahdi Al-Husseini. "United States Patent 12099337 Control moment gyroscope hoist stabilization system, method, and apparatus", Sep 24, 2024
- Mahdi Al-Husseini. "United States Patent 11613365 Electromagnetic device for an ejector-spring static line reserve parachute", US Army, May 28, 2023
- Mahdi Al-Husseini. "United States Patent 11535496 Device for stabilizing a hoisted object", Vita Inclinata Inc., Dec 27, 2022

Publications

PUBLICATIONS

- **Aura: An Automated System for the Real-Time Evaluation of Flight Maneuver Performance** *IEEE INTELLIGENT SYSTEMS*
  Al-Husseini, M., Barnett, J. L., Thomas, J. D., Chen, T. G.
  2026; 41 (2): 115-128

- **Digital simulations to enhance military medical evacuation decision-making** *JOURNAL OF DEFENSE MODELING AND SIMULATION-APPLICATIONS METHODOLOGY TECHNOLOGY-JDMS*
  Fischer, J., Al-Husseini, M., Krishnamoorthy, R., Kumar, V., Kochenderfer, M. J.
  2026

- **Watercraft as Overwater Ambulance Exchange Points to Enhance Air Medical Evacuation.** *Air medical journal*
  Al-Husseini, M., Wray, K. H., Kochenderfer, M. J.
  2025; 44 (1): 23-29

- **Semi-Markovian planning to coordinate aerial and maritime medical evacuation platforms** *AI MAGAZINE*
  Al-Husseini, M., Wray, K. H., Kochenderfer, M. J.
  2025; 46 (3)

- **A Case Study in Revamping Military Medical Evacuation Education for Large-Scale Combat.** *Military medicine*
  Leek, R., Al-Husseini, M., Knapp, M.
  2025

- **Semi-Markovian Planning to Coordinate Aerial and Maritime Medical Evacuation Platforms**
  Al-Husseini, M., Wray, K. H., Kochenderfer, M. J.
  edited by Walsh, T., Shah, J., Kolter, Z.
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2025: 28748-28756

- **Hierarchical Framework for Optimizing Wildfire Surveillance and Suppression Using Human-Autonomous Teaming** *Journal of Aerospace Information Systems*
  Al-Husseini, M., Wray, K., Kochenderfer, M.
  2024