

# Smarter Skies, More Resilient Systems: The Future of Commercial Aviation

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## Farhan Gandhi

Hassan A. Hassan Distinguished Professor  
North Carolina State University

Farhan Gandhi obtained his BTech in Aeronautical Engineering from IIT-Bombay in 1989, and PhD in Aerospace Engineering from U of Maryland's Alfred Gessow Rotorcraft Center in 1995. After 17 years on the Penn State Aerospace Faculty, he moved to Rensselaer Polytechnic Institute in 2012 as the Redfern Endowed Chair Professor in Aerospace Engineering. He was RPI's Aerospace Program Director 2014-2023, and Founding Director of RPI's Center for Mobility with Vertical Lift (MOVE) 2018-2023. In January 2024, Gandhi moved to the North Carolina State University as the Hassan A. Hassan Distinguished Professor in Aerospace Engineering. Gandhi is a Fellow of the American Institute of Aeronautics and Astronautics (AIAA), the Royal Aeronautical Society (RAeS) and the Vertical Flight Society (formerly the American Helicopter Society).



Gandhi has chaired multiple major technical conferences and technical committees. He is one of the nation's top experts on VTOL aircraft aeromechanics, advanced VTOL configurations (including multi-rotor eVTOL aircraft for Advanced Air Mobility applications), reconfigurable vertical lift, and adaptive structures. Gandhi held a Joint Faculty Appointment with the US Army Research Lab, Vehicle Technology Directorate, from 2018-2021. Over a 29-year academic career, Gandhi has published ~360 technical papers in journals and major conference proceedings, and has advised 29 PhD students to graduation. He currently leads a vibrant research group comprising of 2 research scientists and 8 PhD students. On 12 occasions, Gandhi has been a plenary/keynote speaker at major technical conferences and has delivered prestigious named lectures such as the 2022 Royal Aeronautical Society's Cierva Lecture in vertical lift, and the 2019 AIAA Adaptive Structures Lecture, among others.

In the area of multi-rotor eVTOL aircraft technologies, Gandhi's group has conducted cutting edge research in the areas of multi-rotor/rotor-wing interactional aerodynamics, aeroacoustics, flight controls and eVTOL aircraft flying qualities, fault identification and fault tolerance, vibration reduction, eVTOL aircraft configuration design and analysis, including multi-fidelity modeling leading to eVTOL digital twins, and eVTOL aircraft flight testing.



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