Graduate Research Assistant Opportunities

Aircraft Propulsion and Systems Analysis

Purdue University, School of Aeronautics and Astronautics

Funded graduate research opportunities are available for U.S. citizens interested in aircraft systems analysis, propulsion, and computational design. The project is part of a sponsored research effort focused on evaluating advanced propulsion technologies for future large aircraft applications.

The students will work with Purdue faculty (Prof. Leifsson, Prof. Crossley, Prof. DeLaurentis, Dr. Tsutsui) and external research partners to develop computational models and perform aircraft-level trade studies involving propulsion, vehicle performance, and system-level design decisions.

Research activities

The work may include:

- Aircraft performance and mission analysis
- Propulsion system modeling and engine performance characterization
- Multidisciplinary analysis using Python and OpenMDAO
- Parametric and sensitivity studies of propulsion and aircraft design variables
- Analysis of fuel efficiency, range, weight, and aircraft performance
- Development and validation of engineering-level aircraft models
- Trade-space exploration and computational design studies

The project provides an opportunity to work on a real-world aerospace systems problem with direct relevance to future aircraft technology and decision making.

Desired background

We are looking for a motivated graduate student with interests in one or more of the following areas:

- Aircraft design and performance
- Propulsion
- Aerospace systems engineering
- Multidisciplinary design analysis and optimization
- Computational modeling
- Python programming

Experience with OpenMDAO, aircraft sizing/performance codes, propulsion modeling, optimization, or surrogate modeling is beneficial but not required.

Eligibility and support

U.S. citizenship is required for these research positions due to project eligibility requirements.

The positions are intended for graduate students in Purdue AAE or related fields and will provide graduate research assistant support. Both current graduate students and students seeking a new research project/advisor are encouraged to inquire.

Start

Spring 2027 or sooner

Interested?

Email your CV, unofficial transcript, and a short paragraph on your interests to Prof. Leifsson (leifur@purdue.edu) with the subject line “Aircraft Propulsion and Systems GRA.” Review of applications begins immediately and continues until positions are filled.



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