Graduate Research Assistant Opportunities

Build Digital Twins You Can Trust

Purdue University, School of Aeronautics and Astronautics

Funded graduate positions on a new Air Force-sponsored basic research program, a joint effort between Purdue AAE (Prof. DeLaurentis, Prof. Leifsson, Dr. Tsutsui, Dr. Guariniello) and the Oden Institute at the UT Austin.

The positions are open to all qualified graduate students at this time. Please note, however, that if the program later expands beyond the current scope to include applied research, some tasks involving access to Air Force facilities may require a U.S. citizenship.

The opportunity

Digital twins are changing how aerospace systems are designed, tested, and operated, but they are only useful if we can trust what they predict. Join a multi-university team developing the computational foundations that make digital twins accurate, efficient, and reliable from individual components all the way up to full missions.

Research areas

Multifidelity and reduced-order modeling: fast, accurate surrogates built from simulation and test data.

Uncertainty quantification and test design: using models to decide which experiments matter most.

System-of-systems and mission engineering: connecting component-level models to mission-level outcomes.

Scientific machine learning: data-driven models that respect physics and come with guarantees.

We're looking for

PhD students (strong MS students considered) in AAE or a related field.

Solid programming skills (Python preferred).

Background in one or more of: surrogate modeling, machine learning, uncertainty quantification, multidisciplinary design optimization, aircraft computational modeling, computational fluid dynamics, or systems engineering.

Curiosity and a drive to see research reach real aerospace applications.

What you'll get

Graduate research assistantship with stipend and tuition remission.

Close collaboration with faculty and students at Purdue and UT Austin.

Exposure to the Air Force research and test community.

Start

Spring 2027 or sooner.

How to apply

Email your CV, unofficial transcript, and a short paragraph on your interests to Dr. Tsutsui (wtsutsui@purdue.edu) with the subject line "Digital Twin GRA." Review of applications begins immediately and continues until positions are filled.

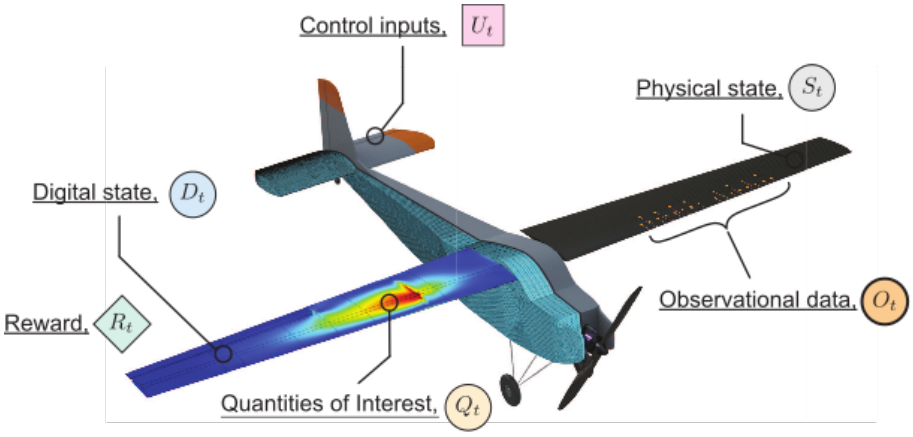


Image from https://kiwi.oden.utexas.edu/research/digital-twin