

# Introduction and Overview

**Shankar Kulumani**

**Flight Dynamics & Control Lab**

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**THE GEORGE WASHINGTON UNIVERSITY**

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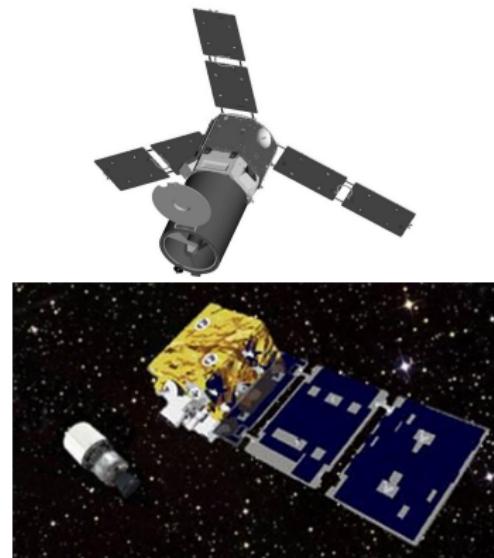
**WASHINGTON, DC**

# Overview

- Projects Overview
- Programming Guidelines
- Course Goals
  - Use high-level programming language to solve engineering problems that will be encountered in engineering courses
  - Course will focus on computer programming for astrodynamics
  - Emphasis on well documented, structured programming, debugging and unit testing to verify that code is correct

# My Background

- 2009 US Air Force Academy, 2013 Purdue, 2018-ish GWU
- Astronautical Engineer USAF
  - ORS-1 - Managed spacecraft development
  - ANGELS - Autonomous rendezvous and orbit determination
- Research in dynamics and controls



# Course Outcomes

- By the end of the course
  - Write programs to solve basic engineering problems in aerospace
  - Develop structured code in a high-level programming language
  - Document programs so they are easier to maintain and modify
  - Debug and test in a systematic fashion to ensure code is correct
  - Create library of code to perform common astrodynamical functions

# Getting Help

- For most (if not all) students, this course will be extremely challenging:
  - New content - astrodynamics and Python
  - Structured programming - systematic, documentation, unit testing
  - Technical writing
- Answers to your problems will rarely if ever be given to you. You'll need to discover and learn these skills through focused effort. You have several sources of help:
  - Instructor
  - Classmates - may ask each other for help.
  - ALL WORK MUST BE YOUR OWN.
    - Copying
    - “Working together”
    - Plagiarizing
  - Textbooks/Internet - reference not copying