# What is a flight computer, anyway?

- **Speaker**: Ian Botashev
  * **Room**: Room 250
  * **Time**: Friday Oct 23, 11:00 am – 11:20 am
- **Format**: Talk (20 min)
  * **Difficulty**: Beginner
  * **Track**: Everything Else
  * **Additional Tags**: Aerospace, Embedded Linux, Simulation, OpenRocket, NASA
  * **Experience**: Computer Engineering student and aspiring NASA engineer.

## Description:

How do modern rockets accomplish the near-impossible tasks of escaping Earth's gravity and achieving precise orbits? This talk explores the world of flight software, from the legendary Apollo flight computer—which operated on a handful of megabytes of RAM 60 years ago—to modern systems.

Ian will discuss how rockets navigate, the sensors they rely on, and the surprising role of Open Source in aerospace, such as the use of embedded Linux in SpaceX's Dragon and the enthusiast-driven OpenRocket project. The session will also feature a demonstration of a custom-built flight simulation involving Earth's gravity and gimbal thrusters, providing a practical look at how basic flight software can achieve complex mission goals.

### Target Audience:

- Space and rocket enthusiasts
  * People curious about embedded systems
  * Beginners interested in physics simulations
  * Anyone wondering how software is applied to extreme hardware environments

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