

Fixing imperfect code

Shankar Kulumani

Flight Dynamics & Control Lab

THE GEORGE WASHINGTON UNIVERSITY

WASHINGTON, DC

What is debugging?

- Set of strategies to fix incorrect code
- Guiding principles
 - Code is never perfect
 - Easier to fix smaller pieces separately
 - Need source of good/truth data

Interactive debugging in Python

- Add the following to the start of your script/module

```
import pdb
```

- Place a “breakpoint” where you want the code to stop

```
pdb.set_trace()
```

- Try to run your code - now “paused” at the breakpoint
 - **s** - step into function/call
 - **n** - next line in current file
 - **l** - list some lines
 - **c** - continue onwards
- Can now interactively check variables/logic and step through code

Debugging after crash - Ipython

- Ipython has many useful features - `%debug` magic
- Use in interpreter immediately after code crashes
- Works exactly the same as `pdb` - but let's you now use Ipython