Computational Fluency Short Course

Introduction

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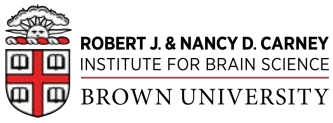


https://github.com/brownritt/cfsc25

Expectations

"Everybody is ignorant, only on different subjects."
- Will Rogers

This short course will demonstrate tools, but the goal is to understand ***process*** and ***frameworks*** for approaching research computation.

Plan to learn "coding" and detailed methods through your research.

You will already know some of the things, but maybe not all the things, and maybe not systematically organized.

Don't be afraid to be wrong. Ask for help when you want it. Help others when you can (*if* they want you to!). *Be professional and kind*.

I have my ways. Develop any process that works for you (and your colleagues…).

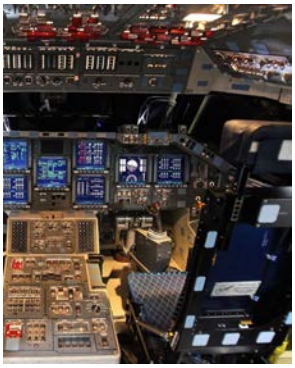
You will need to learn things your mentors don't know, because the practice of science is changing much faster than the people doing it.

Past innovations explain present complexity

1930s

1960s

1990s



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British_Airways_Trident3B_(7107744185).jpg; TridentFlightDeck.JPG; STS-121-DiscoveryEnhanced.jpg
https://commons.wikimedia.org/wiki/File:Space_Shuttle_Endeavour%27s_Control_Panels.jpg

Schedule

Three 1.5 day "sprints":

- today, Thurs 9-12, Thurs 2-4
- Mon 9-12, Tues 9-12, Tues 2-4
- Thurs 9-12, Thurs 2-4, Fri 9-12

Intended topics:

- Computer architectures
- User Interfaces
- Filesystems
- Software dependencies
- Version control
- Coding patterns
- Resource management
- Troubleshooting
- Using AI
- Data and projects

There is room for improvisation: some of what we cover will adapt to timing and your questions.

Course materials will accumulate at https://github.com/brownritt/cfsc25