Computational Fluency Short Course

Filesystems

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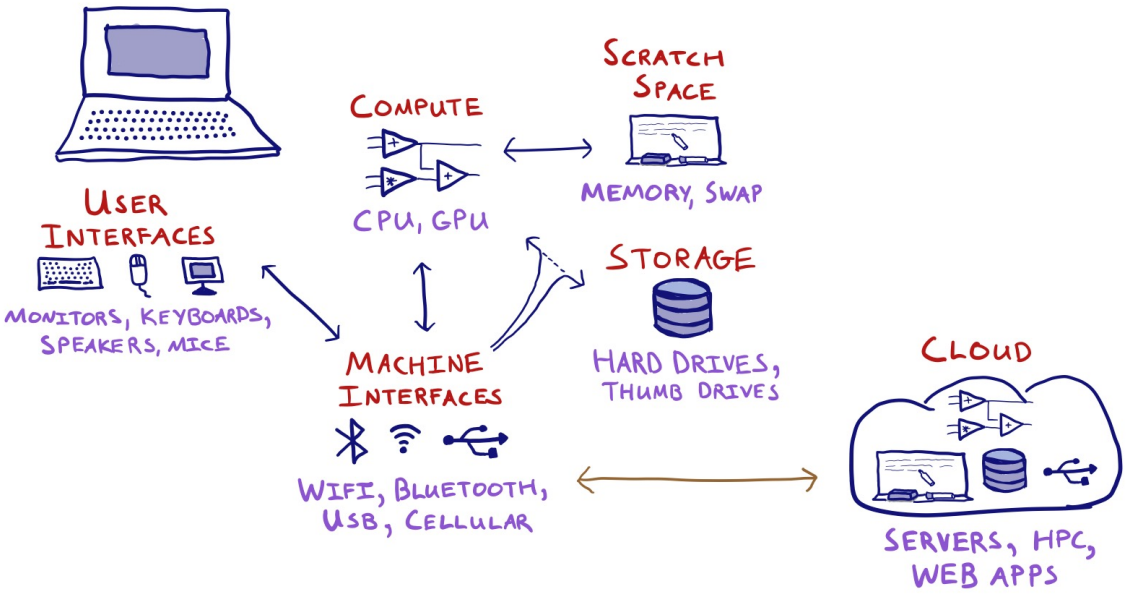
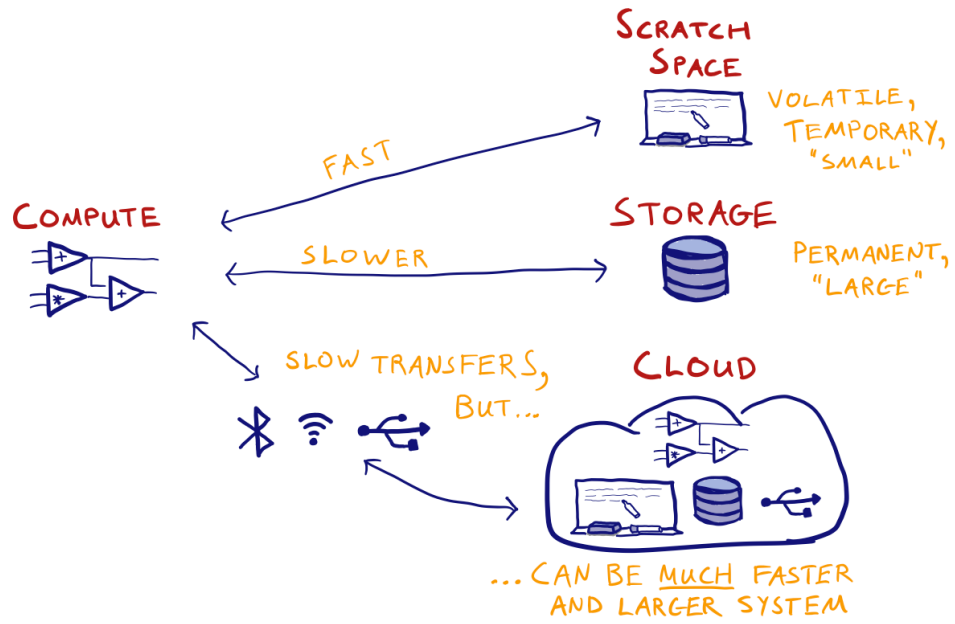
https://github.com/brownritt/cfsc25

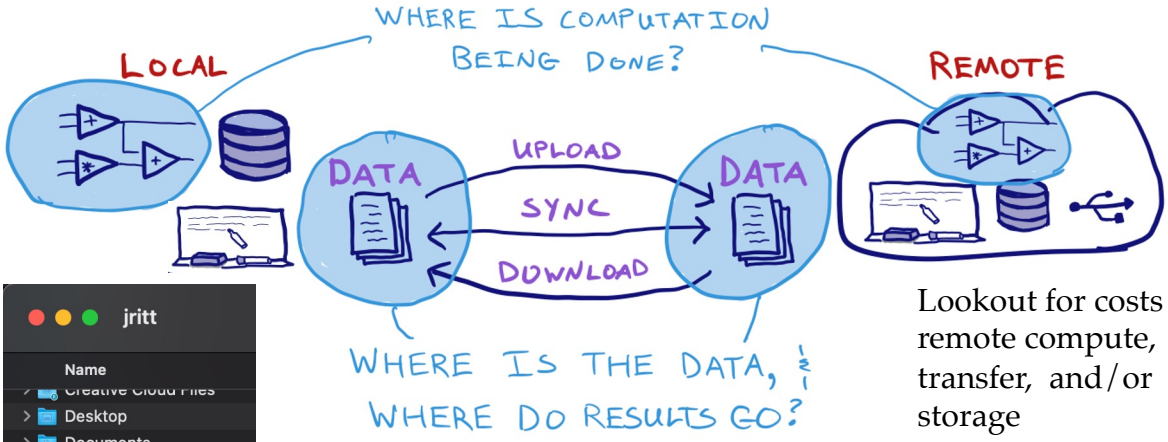
Back to basics: What is a computer?



Varied choices of information capacity and transfer speeds

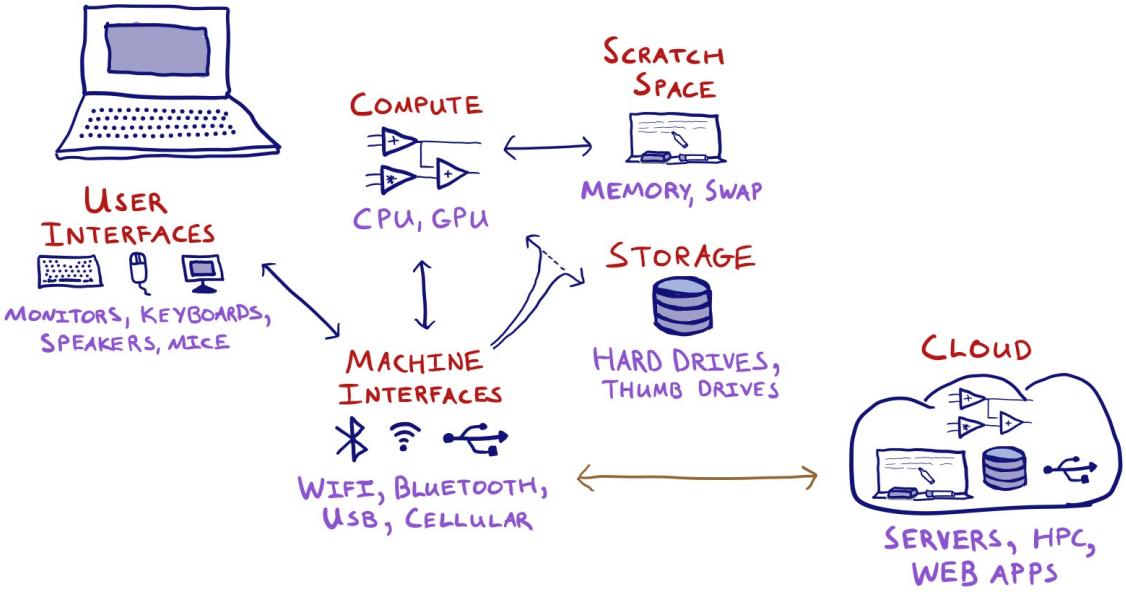


"Cloud" use: Keep your data close, and your compute closer



Lookout for costs for remote compute, transfer, and/or storage

Back to basics: What is a computer?



Dude, where's my data? (and also my code, and my messages, and …)

Storage is organized by the OS: Information is kept in *files*. Every file is located in some *directory*, within a *tree* of other directories.

Locations are described by *paths*:

```
/Users/jritt/Code/EM_event_detection/EM_algorithm_demo.ipynb
```

root directory — subdirectories — *filename* — file type *extension*

Remote locations (URLs) include networking information:

```
https://gitlab.com/fleischmann-lab/calcium-imaging/em-event-detection-
                                    demo/-/blob/master/EM_algorithm_demo.ipynb
```

protocol — *domain name (the "server")*

Note: these are not always "real" files or directories on the remote OS

Absolute and relative paths each have their place

Every process runs in some *working directory*. A ***relative path*** starts from this working directory; an ***absolute path*** starts from the top of the filesystem tree.

An absolute path :

```
/Users/jritt/Code/EM_event_detection/EM_algorithm_demo.ipynb
```

From my *home directory* `jritt/` :

```
Code/EM_event_detection/EM_algorithm_demo.ipynb
```

From `EM_event_detection/` :

`./EM_algorithm_demo.ipynb` or just `EM_algorithm_demo.ipynb`

`./` means "this directory"

`../` means "go up one directory"

`~/` means "my home directory"