AVATR

Advanced Visualization and Analysis for Terascale Research

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Mission

Make computational neuroscience more accessible by providing a common, intuitive interface for annotations, analysis, and visualizations.

Motivation

- Data is available for analysis
  - The pipelines that handle this data are slowing down research
- Researchers don't want to deal with data
  - They would rather do neuroscience research
- Enable these people

Problem

- Neuroscientists have to learn a lot of CS if they want to take advantage of big data tools
  - This means they spend less time doing research
- The current landscape is in disarray: tools break easily, are outdated, or are hard to find.
- Dealing with the data is a large burden
  - Time and Effort

Causes

- Big data means you can't just "look at it" easily.
- A lot of new types of imaging modalities, a lot of techniques
  - Each requires work to look at in a meaningful way
- Nothing standardized

Current Best Practices

OpenNeuro, Ndviz

- They have pipelines setup for data ingest, and for running algorithms on the data
- They have a great UI to monitor
- They are open source

What's Missing

specificity

- What Works
  - See earlier slide
- What doesn't
  - No visualization tools available
  - Researchers still need to work on the data post compute to "look at it"

Solution

- A computational neurodata infrastructure that is born in the cloud and stays in the cloud
- Built with tools from ndvis and from what we see openneuro using
- Build the rest

Impact

- Neuro researchers
- Esp. People not that good at CS
- Esp. People with a lot of data
- Esp. People doing new stuff