Mapping Brain Activity at Scale with Cluster Computing

Freeman et al.

Opportunity

- Neuroimaging technology is blowing up!
- This means more data than ever!
- 1 hour of 2-photon imaging in mice can lead to 50-100GB

Challenge

- Now processing time is the bottleneck
- Distributed computing platforms exist (Hadoop/MapReduce)
- Issues still exist

Action

- Thunder! (https://github.com/thunder-project/thunder)

Resolution

- Caching vs not caching
- 750GB
- Direct algorithm took ~1,983s
- Thunder took ~ 27s

Review

Interesting platform and cool explanation

Open source so future work is open to the whole community