The big data challenges of connectomics

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Opportunity

Something awesome is happening.
Exploit it.

The field of connectomics came about in the 1970s, but modern connectomics brings the problem of handling big data.

The paper mainly describes how the connections in the brain hold invaluable data but unknown data.

Challenge

It’s difficult though. Why haven’t other people done it?

As mentioned before, there is so much that is unknown to us about the brain’s function.

Problems include alignment, reconstruction, feature detection, and graph generation on the neuroscience side, and data size, data rate, computational complexity, parallel computing, compute system, and data management and sharing on the data science side.

However, there are possible solutions to this that come with scientific discovery.

Action

What did they do that was so awesome?

One way that this big data problem can eventually be solved is through advances in electron microscopy. Overall, there should be minimal human involvement. These advances may not have materialized yet, but the certain approaches show promise.

The data science problems can largely be solved through advances in image and data processing technology that can effectively handle large amounts of data in a timely manner.

Resolution

The result and how it changes the world.

Indubitably, there is potential for improvements in the technology and the methods for going about this problem.

As mentioned in class, these projects are expensive but are worth it because of what they yield in the end.

Feedback
Future Work

The article was unique in the sense that it did not describe a scientific experiment but rather the problems and possible solutions that come in the future.

It was very well written because the author explained the concepts such that it made sense to experts in the field as well as newcomers.