A Virtual Reality Visualization Tool for Neuron Tracing
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Introduction to Connectomics
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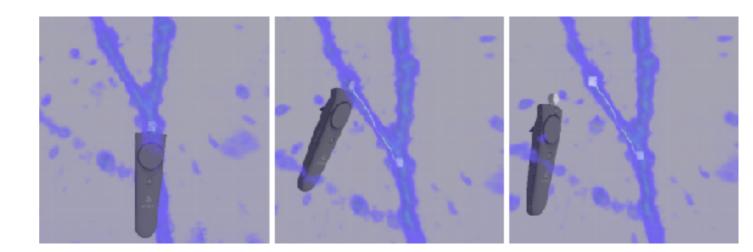
Opportunity and Previous work

- Using Neuron-tracing to study connectomics

- How brain circuits relate to behavior

- Understanding the fundamental connectivity within a brain may lead to breakthroughs in other area, such as brain diseases
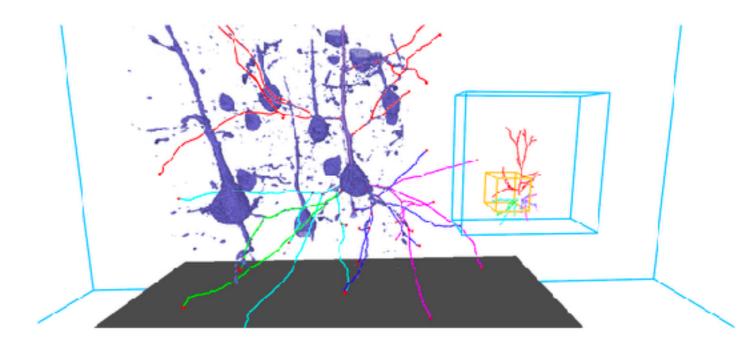
- Hand draw, NeuroLucida

Challenges

- Time consuming

- Laborious effort

- Inverse problem

- Raw data size

Action

- Developing technology using consumer-grade VR technology

- Two wands: tracing and navigation

- Two level caching system; paging system

Resolution

- Accuracy: as accurate

- Speed: faster

- Navigation in a 3D scene, better spacial perception

- More intuitively (easy to interact and less frustrating)

Future

- Support several users in the same scene

- Reediting instead of undo

- A semi-automatic guided method for extracting neuron structure

Thank you!