Mapping Memories in Mice Minds

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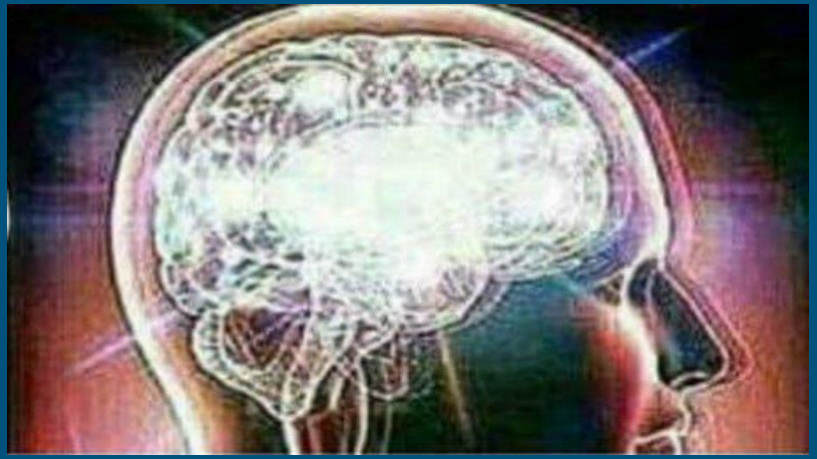
Intro to Connectomics

Inspiration

- Goal: Understand cellular structure & connections that allow for formation, encoding, and storage of memories
- Attempts to map brain memories have been limited



Steps

1. Train 30 mice to respond to reward-based stimuli
2. Pick highest performing mouse to image with Zeiss Crossbeam 550 FIB-SEM
3. Create brain graphs
4. Build neural network modeling original mouse brain
5. Convert network to virtual simulations
6. Use simulations to conduct experiments & compare to original mouse

Costs & Practicality

- Lab Location: Send Request for Proposals
- Data Upload/Storage: $200 million for 60 months via AWS
  - Amazon Glacier: $0.004 per GB
- FIB-SEM Mouse Imaging: $2.075 billion
- Projected cost of virtual simulation: $6.851 billion
- CLARITY light microscopy technique can later be used to analyze a wider array of mice