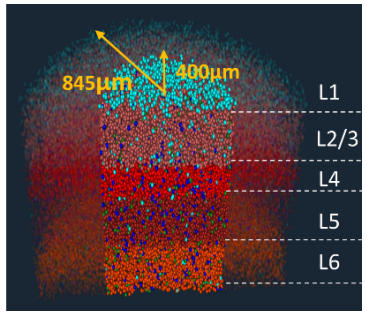
From diverse dynamics to diverse computation via neural cell types

What will be delivered?

Methods – Task training with complex neurons and synapses
Model – Mouse V1 model with complex components trained on predictive tasks
Theory - Explain how heterogeneous cellular dynamics enhance task training

What is new inside?

Bio Net



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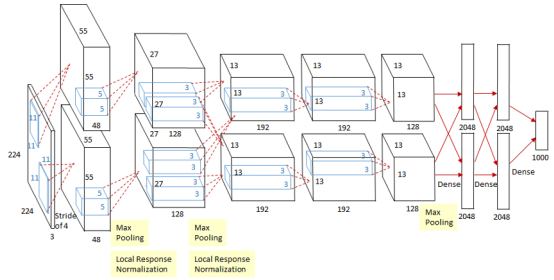


Alex Net

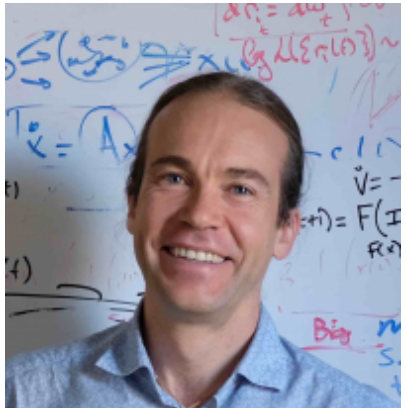
How will this change current practice?

Can provide insights into the role cell type diversity plays in computation
Can provide insights into new artificial intelligence methods

End Users

Omri Barak, Geometric and dynamical systems analysis of network learning
Brent Doiron, Cell type specific dynamics in neural circuits
Konrad Kording, analysis of network activity to reveal computation, inference of cell types from data
Blake Richards, Use of machine learning to test theories in neuroscience
Anthony Zador, Relevance of models and tools for sensory modalities beyond vision

Stefan Mihalas
Allen Institute



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