

Generative network modeling reveals a first quantitative definition of bilateral symmetry exhibited by a whole insect brain connectome

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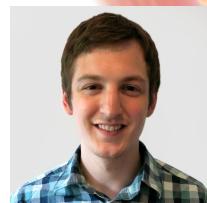
Acknowledgements



Mike
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Cardona



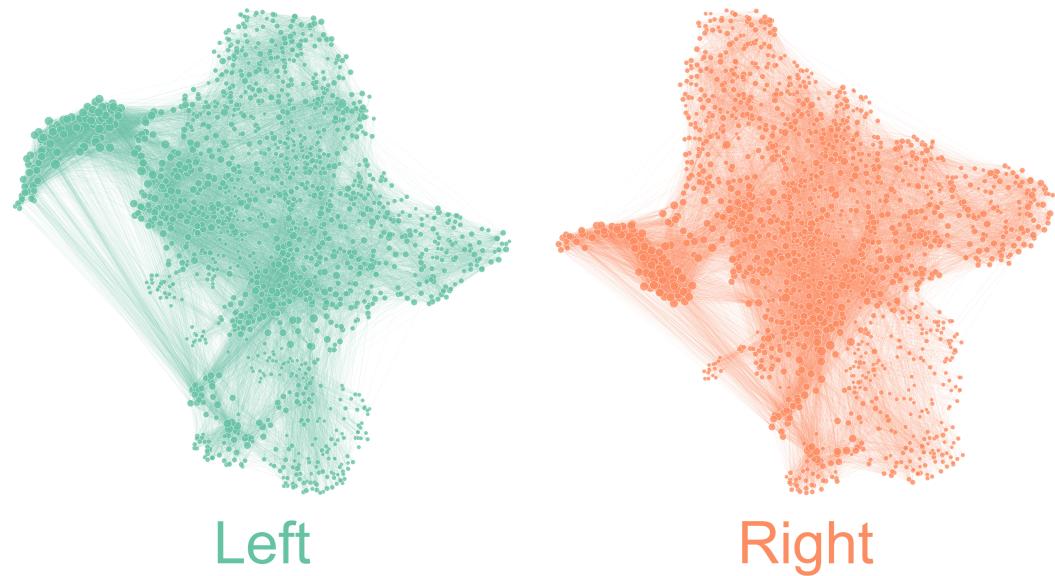
Carey
Priebe



Joshua
Vogelstein

Motivation

Drosophila larva brain connectome



- Want a two-network-sample test!
- $A^{(L)} \sim F^{(L)}$, $A^{(R)} \sim F^{(R)}$
- $H_0 : F^{(L)} = F^{(R)}$
 $H_A : F^{(L)} \neq F^{(R)}$

Are the **left** and **right** sides of this connectome
different?

ER testing

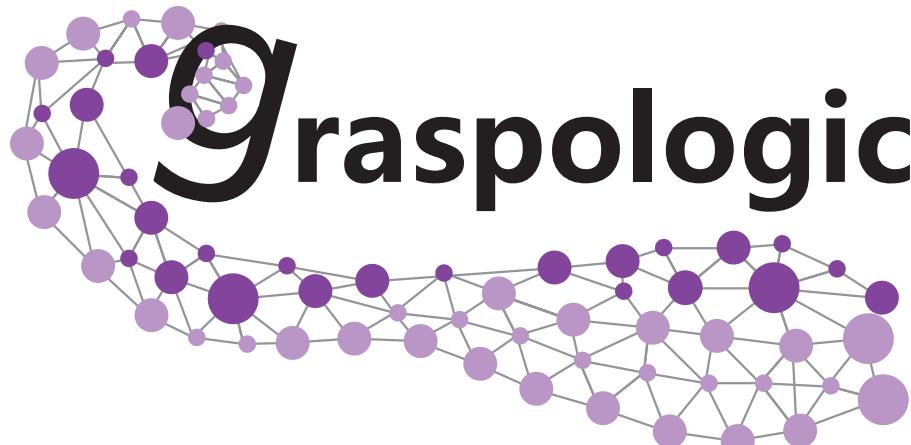
SBM testing

Density?

Extensions

graspologic:

github.com/microsoft/graspologic



downloads 121k



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This work:

github.com/neurodata/bilateral-connectome

A screenshot of a Jupyter book page titled "The Erdos-Renyi (ER) model". The page includes a sidebar with links to "Abstract", "PRELIMINARIES", "Introduction", "Outline", "Unmatched vs. matched networks", and "Larval Drosophila melanogaster brain connectome". The main content area contains text about the Erdos-Renyi model, a mathematical formula $P[A_{ij} = 1] = p_{ij} = p$, and a note about global connection probability.