Statistical Connectomics HW #4

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Mean Connectome

Sample Space: $A = \{0,1\}^{n \times n}$
The set of n by n matrices where each entry represents the existence of a connection between the two subsequentnt nodes.

Model: $A_{ij} \sim Bernoulli(P_i j)$
Where $P = \{P_\theta : \theta \in \Theta\}$
Estimate the connections between two nodes as a Bernoulli

Action Space: $(0,1)^{n \times m}$
0 indicates that there is no edge and 1 indicates that there is an edge.

Decision Rule: $\hat{P} = \frac{1}{m} \sum_1^m A^i$

Loss: $l : A^n \times \Theta \Rightarrow \mathbb{R}$

Risk: $E[l]$