HW Stat Conn: Estimating an Average Connectome

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1. **Sample Space:**

   $A = \{0,1\}^{n \times n}$

2. **Model:**

   $A^i \sim \text{Bern}(P)$
   $\{P \in (0,1)^{n \times n} = \Theta\}$

3. **Action Space:**

   $\mathscr{A} = \Theta$

4. **Decision Rule:**

   $\hat{A} = \frac{1}{m} \sum_i^m A^i$

5. **Loss:**

   $l : A \times \hat{A}$
   $l : \sum_{u,v \in [n]} (\hat{a}_{uv} - P_{uv})^2$

6. **Risk:**

   $E[l] \approx \frac{1}{k} \sum_j^k l_j$