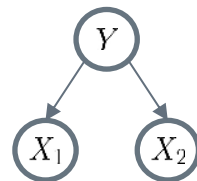




## Causal Graphs (CGs)

Representation of our knowledge of data generating processes.

CGs imply **conditional independence (CI)** relations (e.g.  $X_1 \perp\!\!\!\perp X_2 \mid Y$ ).



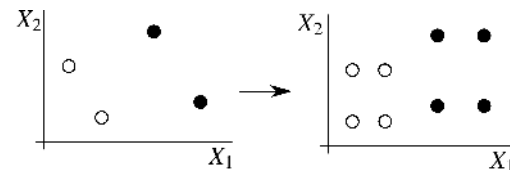
## Research Question

How to use such prior knowledge in predictive modeling?

## Idea & Results

**Data augmentation** to reflect the CI relations.

(Idea: Independent  $\Rightarrow$  Shuffled data is equally likely)



- Theory implying the method **mitigates overfitting** under correct knowledge of the CG.
- Empirical performance improvement.