

Hierarchical Models

The US presidential is decided by each state voting for the candidates, and the candidate who receives the most votes gets the state's vote. The candidate who gets the most states wins (yes, this is overly simplified!).

1. How good are national polls for deciding who will win the election?
 - Is there equal support in each state?
2. How can we treat variation between states?
 - Does information from one state say anything about the others?
 - Can we predict how one state will vote, based on its neighbours or similar states?
 - Can we model state behaviour based on covariates (e.g. average wealth)?
3. We can model the states, but it is individuals who vote. How do these levels relate to each other?
 - Is a voter affected by state-level effects?
 - How can we think about the uncertainties at the different levels?