**Discussion**

**What has been done?**

1. Prediction in general elections: presidential or parliamentary elections (national)
2. Mostly focus on social media text data => electoral results
   1. Sentiment analysis
   2. Naive-bayes
3. Some cross-national research has been done, very few focus on local elections
   1. Why is local importance? Low voter turnout rates in local elections, an extension of national electoral contests, different patterns between local and national elections, … etc.
   2. State-level, municipal
4. Probabilities of winning

**What has been found to be impactful?**

1. A lot discussing social media data to predict electoral results => text data (mixed evidence)
2. Polling data might the most important factor
3. Incumbent
4. Campaign finance
5. Structural factors (economic and social conditions) found weak predictive power
6. Alternatives
   1. Past electoral results (Christopher Prosser, 2016)

**What models might be best to use?**

1. Bayesian additive regression trees
2. Artificial Neural Network

**What datasets are out there?**

1. Precinct-level data is available on [Allegheny county website](https://www.alleghenycounty.us/Government/Elections/Election-Results)
2. [MIT electoral lab](https://electionlab.mit.edu/data)
3. Voter registration per county

**Literature List**

Ryan Kennedy et al. ,Improving election prediction internationally. Science 355, 515-520 (2017). DOI:10.1126/science.aal2887

1. 4 categories:
   1. Structuralists: economic factors
   2. Aggregators: polling data
   3. Synthesizers: combining 1 and 2
   4. Judges (my understanding: just guess): use various quantitative and non-quantitative techniques to evaluate the existing evidence through their own expert lens
2. Cross national prediction, lack of high quality data
3. Bayesian additive regression trees (i google it, its a type a decision tree)

P. T. Metaxas, E. Mustafaraj and D. Gayo-Avello, "How (Not) to Predict Elections," 2011 IEEE Third International Conference on Privacy, Security, Risk and Trust and 2011 IEEE Third International Conference on Social Computing, Boston, MA, USA, 2011, pp. 165-171, doi: 10.1109/PASSAT/SocialCom.2011.98.

1. Social Media data: predict electoral results

Nadeau, R., Dassonneville, R., Lewis-Beck, M. S., & Mongrain, P. (2020). Are election results more unpredictable? A forecasting test. Political Science Research and Methods, 8(4), 764–771. doi:10.1017/psrm.2019.24

1. Assumption before: Structural forecasting models, that use information from “fundamental” variables => increasingly error-prone
   1. Campaign strategies become more and more important
2. Finding: no

Christopher Prosser (2016), Do local elections predict the outcome of the next general election? Forecasting British general elections from local election national vote share estimates, Electoral Studies, 41: 274-278.

1. Local predict general election
2. General election predicts local elections? Theory: electoral nationalization

Zuloaga-Rotta, L., Borja-Rosales, R., Rodríguez Mallma, M. J., Mauricio, D., & Maculan, N. (2024). Method to Forecast the Presidential Election Results Based on Simulation and Machine Learning. Computation, 12(3), 38. <https://doi.org/10.3390/computation12030038>

1. Very clear, step-by-step introduction of models they used
2. Artificial Neural Network (deep learning)
   1. I have some experience to use this predict the electoral results in France many years ago with my Dad, dont remember the detail, but i think this is a feasible model
3. Cross-country prediction: Brazil, Peru, Uruguay

**Incumbency**

Jacobson, G. (2015) It’s Nothing Personal: The Decline of the Incumbency Advantage in US House Elections. The Journal of Politics. 77(3). <https://doi.org/10.1086/681670>

Trounstine, J. (2011), Evidence of a Local Incumbency Advantage. Legislative Studies Quarterly, 36: 255-280. <https://doi.org/10.1111/j.1939-9162.2011.00013.x>

1. Notice: incumbency advantage is the effect of incumbency itself, not including the factors that come with incumbency such as experience, more knowledge, more public recognition etc.

Gelman, A., & King, G. (1990). Estimating Incumbency Advantage without Bias. American Journal of Political Science, 34(4), 1142–1164. <https://doi.org/10.2307/2111475>

Gordon, S.C. and Landa, D. (2009) Do the Advantages of Incumbency Advantage Incumbents? The Journal of Politics. 71(4) <https://doi.org/10.1017/S0022381609990223>

WRIGHT, J. R. (2012). Unemployment and the Democratic Electoral Advantage. American Political Science Review, 106(4), 685–702. doi:10.1017/S0003055412000330