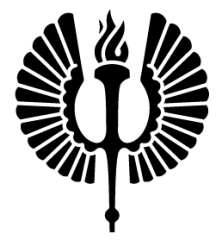


Modelling political ideologies from parliamentary speeches



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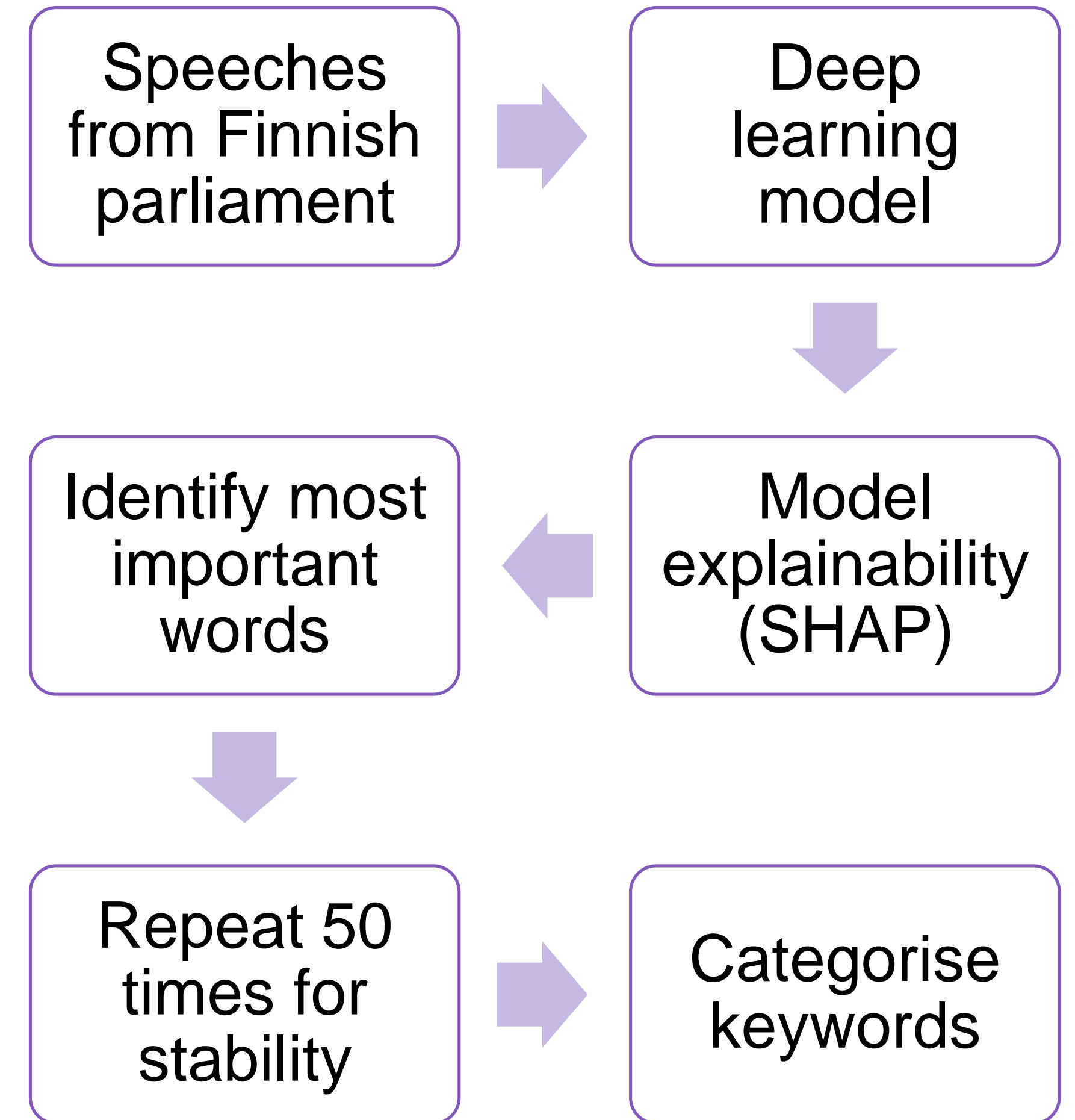
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Background and objectives

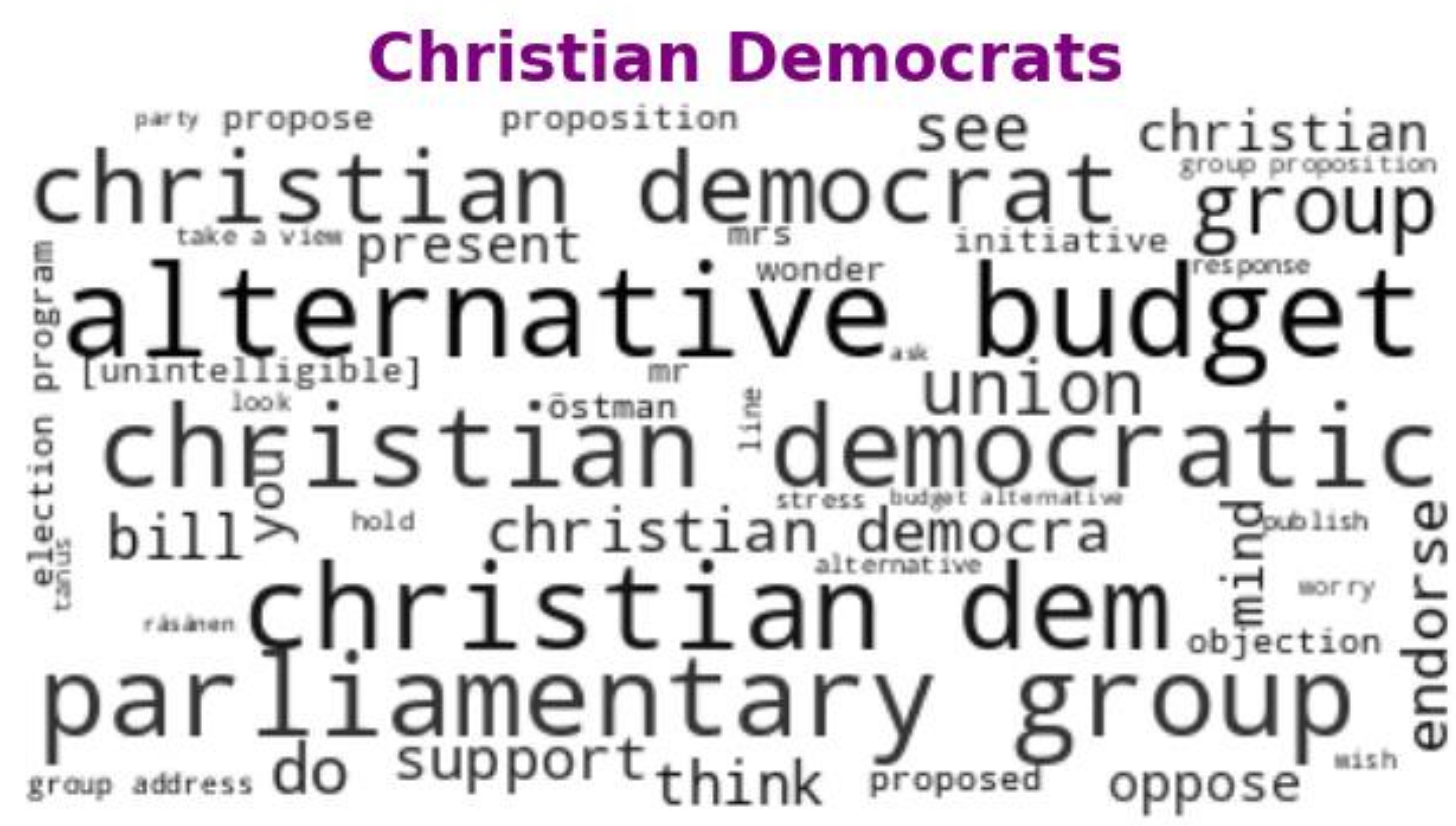
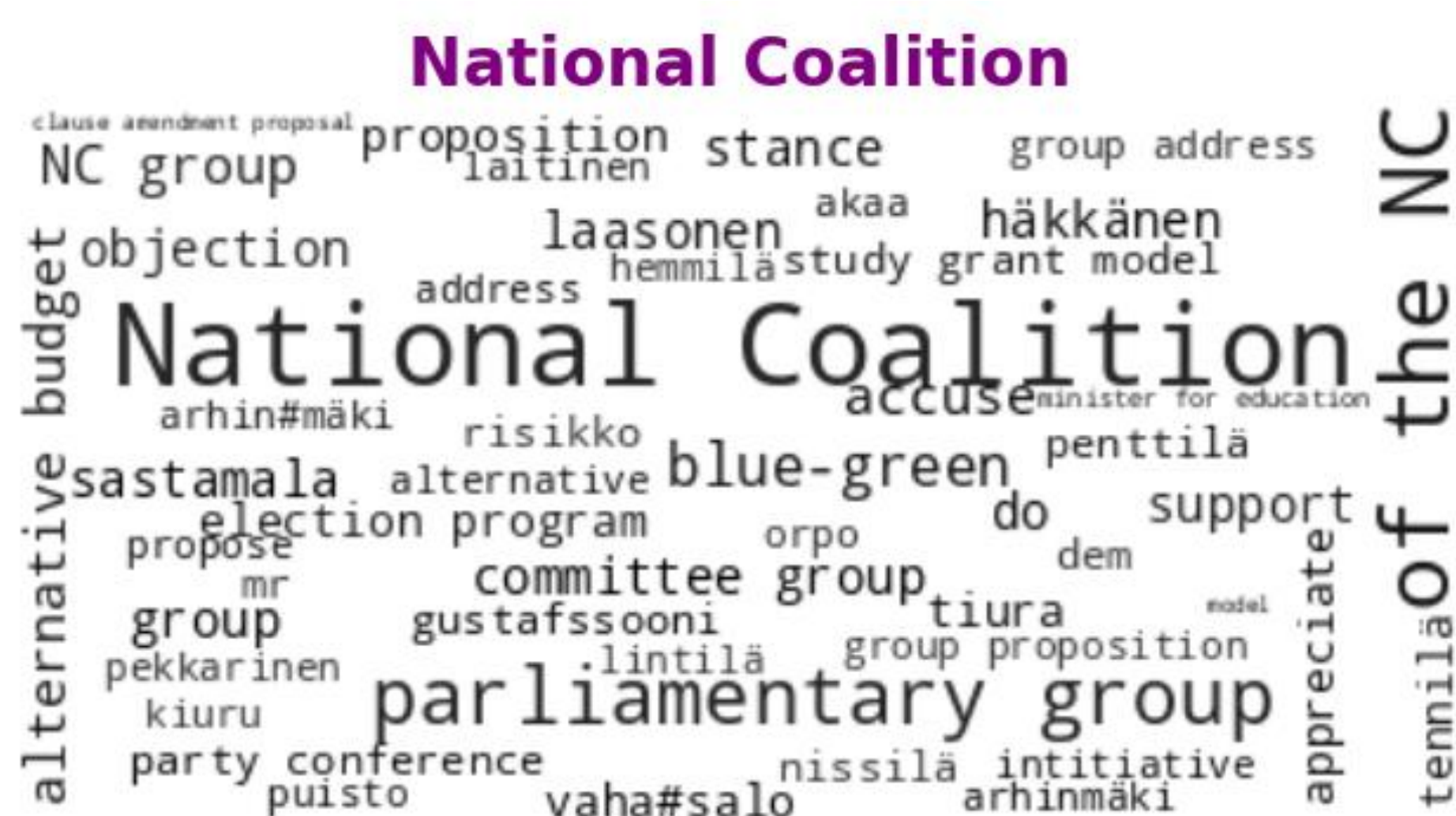
- Ideology is partly constructed in discourse and political parties can claim ownership of certain issues and values
- The language and rhetoric used by political parties reflects their underlying political ideologies
- Can we use **machine-learning** to predict party affiliation and model explainability to identify keywords that reflect party ideology?

Data and methods

- Data: Speeches held in the **Finnish parliament** from 2000 to 2021 by eight parties (250,000 words)
- We train a **BERT model** to recognize party-affiliation
- Keywords identified using **model explainability** method SHAP
- SHAP calculates the weight that words have towards a prediction by masking them and observing how the prediction changes



Keywords in English



Keywords by category

SD	12	10	5	6	9	0	1	6	0	1
NC	11	11	3	4	14	1	2	3	0	1
Centre	11	2	3	2	14	0	4	5	1	8
Greens	4	0	4	8	8	1	0	3	7	15
Left	10	2	7	5	6	1	6	11	0	2
Finns	15	4	8	5	7	1	0	6	2	2
SPP	3	1	3	3	4	5	1	16	6	8
CD	7	0	6	9	11	2	0	4	0	11
	Own party or MP	Other party or MP	Objections and alternatives	Other stance-taking	Institutional roles	Formalities	Places and demonyms	Values, ideology, policies	Descriptions	Other

Results

- Model achieves F1-score of 67%
- All parties like to talk about themselves!
- Large parties (NC, SDP, Centre) use more neutral and institutional rhetoric
- Smaller parties use more ideologically motivated and polarizing rhetoric
- The Finns stand out with their "alternative" rhetoric – a promise of change
- The agrarian Centre and the Left Alliance mention places where their support is strong
- Individual style can also show: a fifth of speeches from the Greens were given by a single MP