### Modelling political ideologies from parliamentary speeches



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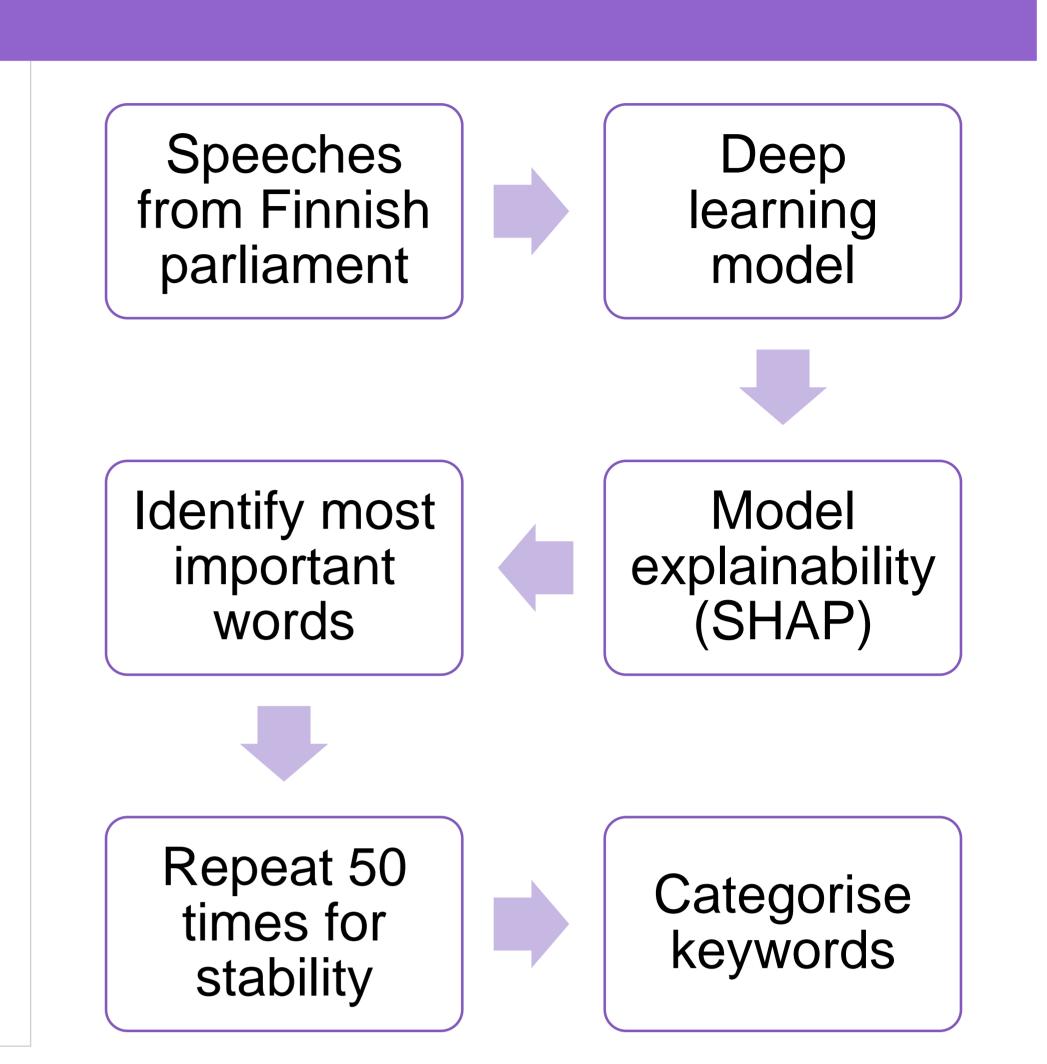
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### Background and objectives

- 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

### **Social Democrats**

bourgeoise proposed centre party
labour movement ranta#kanga social democratic group
support party alternative budget
party alternative budget
line ranta#kangas demand orpo social democracy group ukkola committee group ukkola social democracy group ukkola social democracy group
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Centre

alternative top project secondly stance

## NC group proposition stance group address NC group laitinen stance group address believed in the stance objection laasonen akaa häkkänen hemmilästudy grant model address hemmilästudy grant model arhin#mäki risikko blue-green penttilä propose dem group gustafssooni proposition propo

**National Coalition** 

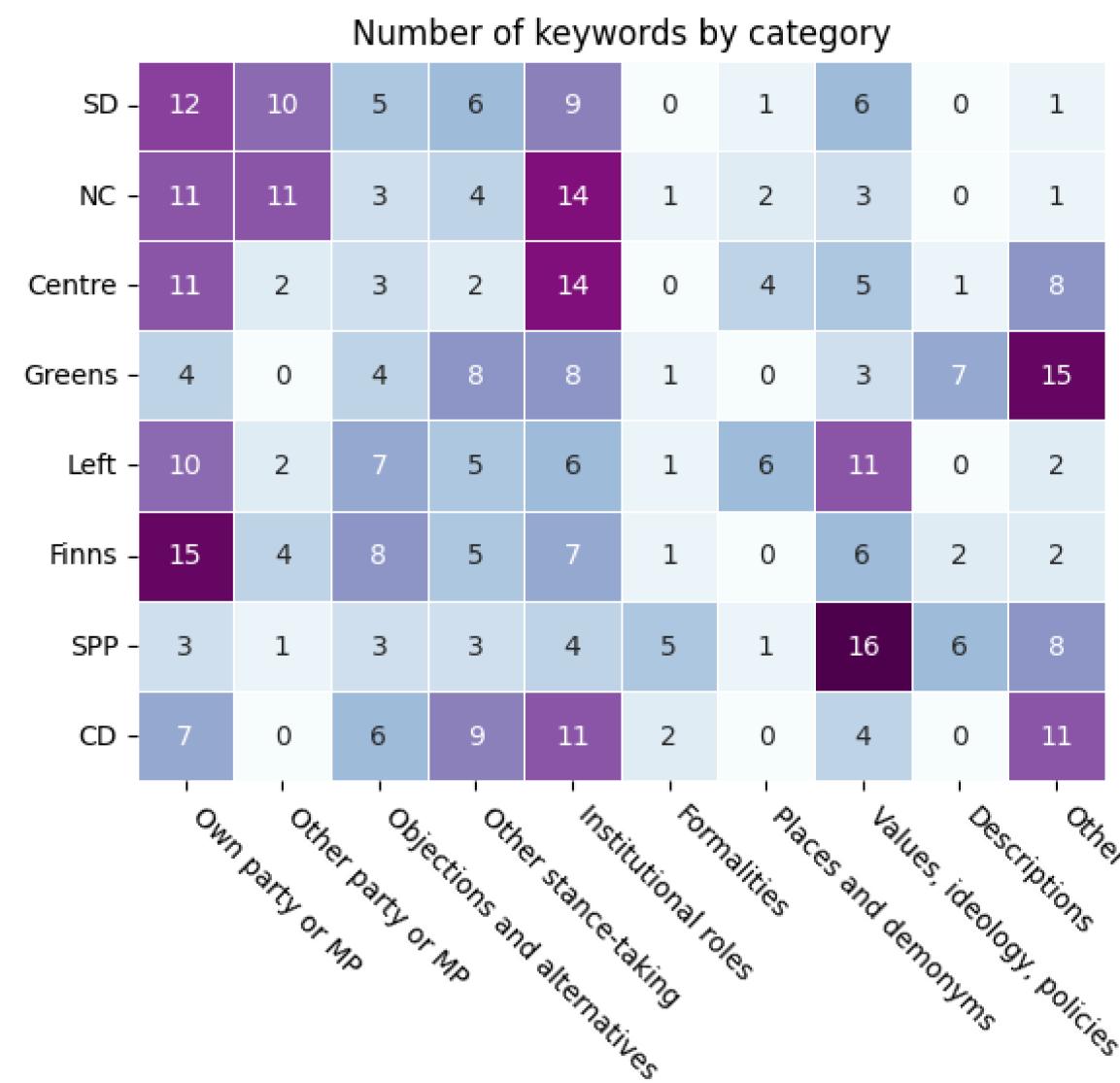
### Greens

vaha#salo

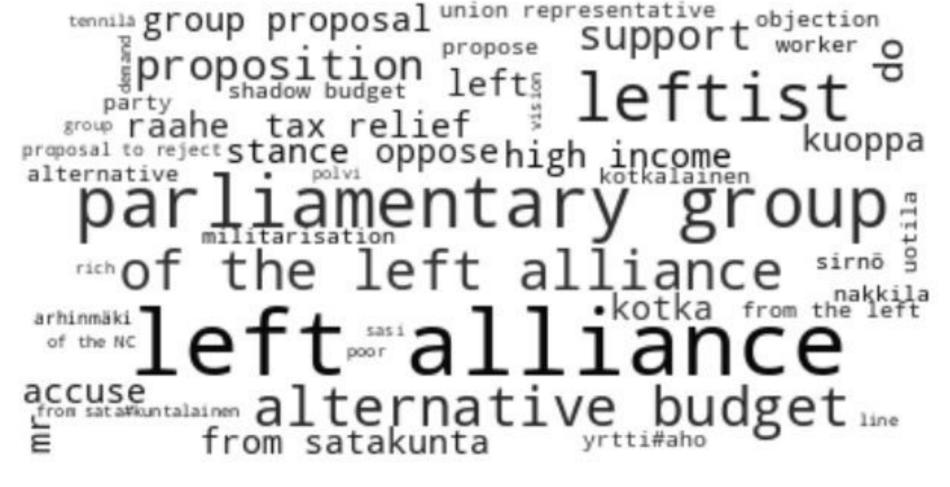
party conference puisto



### Keywords by category



### Left Alliance



# relevant eloma in accord with blue collar worker parliamentary group group group amendment proposition proposition amendment proposal soini juvonen eerola group address mantylägreen-left proposed objection proposed sclause amendment proposal sccuse support tavio alternative budget

### 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



### Christian Democrats

christian democrat group proposition see christian group proposition alternative budget union christian democratic bills hold christian democratic parliamentary group address do support think proposed oppose