

# Understanding the United States Congress through Data Visualization, Network Analysis, and Topic Modeling

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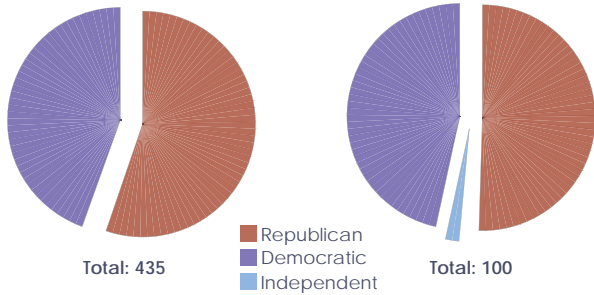


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## The Current State of the US Congress

House

Senate



The US Congress is composed of the House and the Senate.

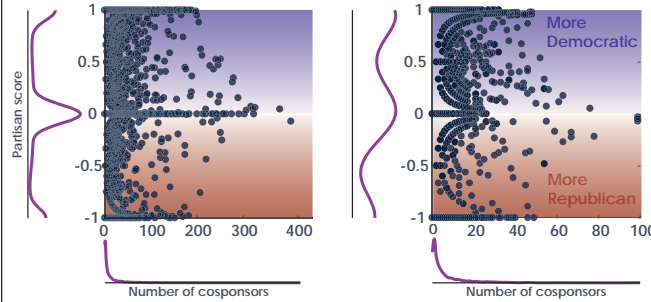
Congress proposed over 9000 bills since 2017 of which over 100 have become law.

This is an effort to make the activities of Congress members and legislative data more accessible to everyone.

## Partisan Score of Bills Proposed since 2017

House

Senate



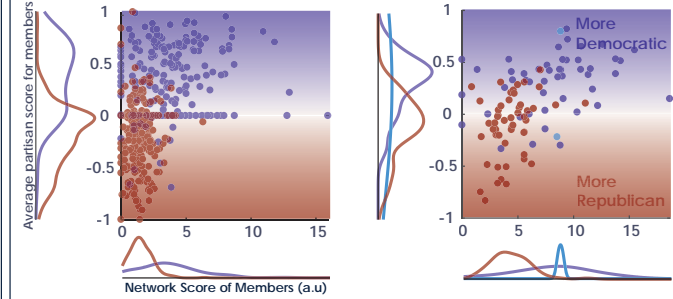
Partisan scores for proposed bills were calculated by the balance of Republican and Democratic cosponsors. The bills proposed in the House of Representatives tend to be either bipartisan or very partisan.

The bills proposed in Senate have a variety of partisan scores but have leaned Democratic since 2017.

## Importance in Cosponsor Network of Current Members of Congress

House

Senate



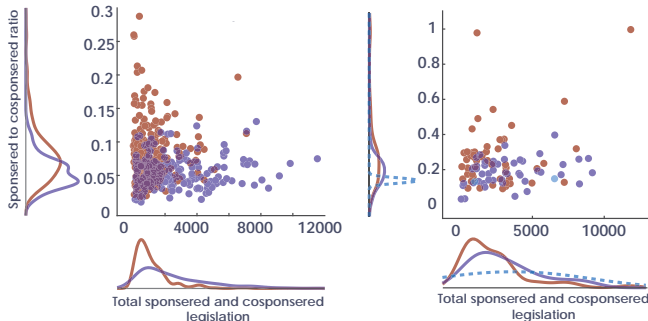
Network importance scores were calculated with PageRank on connectivity matrices between members created from cosponsors of proposed bills.

Democrats in the House and the Senate have higher mean network importance scores in cosponsor networks and more variability.

## Lifetime Productivity of Current Members of Congress

House

Senate

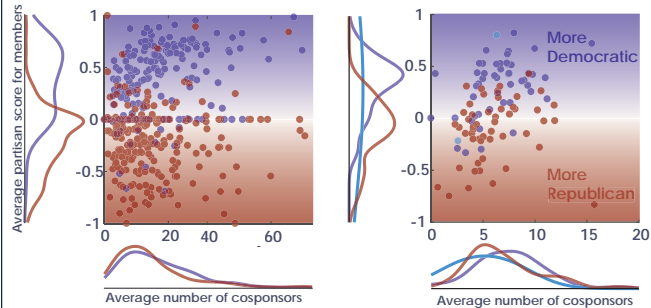


Republicans in the House are more likely to have sponsored more bills than they have cosponsored than Democrats. Democrats in the House are more likely to have a larger number of total sponsored and cosponsored bills. These differences are mirrored in the Senate but to a lesser degree.

## Partisan Score of Current Members of Congress

House

Senate



Average partisan score for members is calculated by averaging the partisan score of bills proposed by the members since 2017.

Republicans in the House and the Senate are more likely to have Democratic cosponsors on bills they propose than Democrats are likely to have Republican cosponsors.

## Topic Modeling of Bills Proposed since 2017



With topic modeling of bill names and automated keyword extraction from bill summaries, we can start grouping bills into categories.

Additionally, this text-based analysis can further identify features of congress members to create a keyword- or topic-based legislative matching service.

## Acknowledgements

I would like to acknowledge The Library of Congress and Congress.gov since without them it would have been impossible to scrape this data.

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