

# Cycle Breaking in Proxy Voting

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## 1. INTRODUCTION

**Lemma 1.1** *Here is an example Lemma.*

PROOF. The proof is trivial.  $\square$

[?]

## 2. PREVIOUS WORK

## 3. OUR WORK

### 3.1 Cycle Formation

**Theorem 3.1** *CFLIT!!!!*

PROOF. The proof is left as an exercise for the reader.  $\square$

### 3.2 Centrality

## 4. CONCLUSION

### 4.1 Future Work

In this paper, we explored the idea of using centrality measures to break cycles, our reasoning being that a proxy to someone is an implicit vote of confidence in that person's expertise. If we view the graph of proxy votes as a graph where directed edges represent votes of confidence, then centrality are the natural choice to choose the experts in the graph. However, centrality measures do not require that nodes only "proxy" to one other node — having this as a requirement in proxy voting limits the information we can retain from voters, as it forces the graph to be unnecessarily sparse. One potential way to get around this problem is through the use of *confidence networks*. Instead of proxying, voters in a confidence provide a set of voters they consider knowledgeable about a certain domain — we could use these sets to construct a graph.

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## 5. REFERENCES

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- [2] Albert Einstein. *Zur Elektrodynamik bewegter Körper*. (German) [*On the electrodynamics of moving bodies*]. Annalen der Physik, 322(10):891?921, 1905.
- [3] Knuth: Computers and Typesetting, <http://www-cs-faculty.stanford.edu/~uno/abcde.html>