

Community Detection on the Reddit Hyperlink Dataset

Alexander Rundle
Department of Computer Science
University of Exeter, Exeter, UK

Internal Supervision:
[REDACTED]
University of Exeter, Exeter, UK

Internal Supervision:
[REDACTED]
University of Exeter, Exeter, UK

Abstract—WRITE ABSTRACT AT END OF WRITING REPORT

I. INTRODUCTION: CONTEXTUALIZATION AND MOTIVATION

A. The Reddit Hyperlink Dataset

[1]

II. METHODS: DESCRIPTION AND IMPLEMENTATION

Before performing any community detection methods on the Reddit Hyperlink Dataset, I first load the supplied TSV file into a Pandas [2], [3] DataFrame.

A. Girvan-Newman Algorithm

[4]

B. Louvain Algorithm

[5]

C. Fluid Communities Algorithm

[6]

III. EXPERIMENTS AND RESULTS

IV. CONCLUSIONS

A. Future Work

REFERENCES

- [1] S. Kumar, W. L. Hamilton, J. Leskovec, and D. Jurafsky, "Community interaction and conflict on the web," in *Proceedings of the 2018 World Wide Web Conference on World Wide Web*. International World Wide Web Conferences Steering Committee, 2018, pp. 933–943.
- [2] The Pandas Development Team, "pandas-dev/pandas: Pandas," Feb. 2020. [Online]. Available: <https://doi.org/10.5281/zenodo.3509134>
- [3] Wes McKinney, "Data Structures for Statistical Computing in Python," in *Proceedings of the 9th Python in Science Conference*, Stéfan van der Walt and Jarrod Millman, Eds., 2010, pp. 56 – 61.
- [4] M. Girvan and M. E. Newman, "Community structure in social and biological networks," *Proceedings of the national academy of sciences*, vol. 99, no. 12, pp. 7821–7826, 2002.
- [5] V. D. Blondel, J.-L. Guillaume, R. Lambiotte, and E. Lefebvre, "Fast unfolding of communities in large networks," *Journal of statistical mechanics: theory and experiment*, vol. 2008, no. 10, p. P10008, 2008.
- [6] F. Parés, D. G. Gasulla, A. Vilalta, J. Moreno, E. Ayguadé, J. Labarta, U. Cortés, and T. Suzumura, "Fluid communities: A competitive, scalable and diverse community detection algorithm," in *Complex Networks & Their Applications VI: Proceedings of Complex Networks 2017 (The Sixth International Conference on Complex Networks and Their Applications)*. Springer, 2018, pp. 229–240.