

The University of Oxford

## C5.4 Networks

Hilary Term 2018

Write a report on a the topic of kernels on networks, based on the papers:

- R. I. Kondor and J. Lafferty. Diffusion kernels on graphs and other discrete structures. In Proceedings of the 19th International Conference on Machine Learning (ICML 02), pages 315-322, 2002.

and

- F. Fouss, L. Yen, A. Pirotte, and M. Saerens. An experimental investigation of graph kernels on a collaborative recommendation task. In Proceedings of the 6th IEEE International Conference on Data Mining (ICDM 06), pages 863-868, 2006.

Your report must include some numerical simulations or mathematical derivations (produced by you), and a critical discussion on the work. You are also invited to search for subsequent developments of these works in the literature.

Your report should be in the format and style of an article for the journal Proceedings of the National Academy of Sciences, and the main text must be no more than 6 typeset pages and must use their LaTeX style files (a template and style files will be provided). The report must include all sections (abstract, significance statement, etc.) in papers published in that journal (2017 format of papers). It is permissible to include a section of Supplemental Information that shows additional figures and calculations. In your report, indicate explicitly which ideas are new and which come from existing sources, and use appropriate and explicit attributions for all references (which must include papers reporting original research) or anything else (e.g., including code and figures) from other sources.

*[You need not submit scripts for any code you produce, but you may include them as part of Supplemental Information if you wish.]*

*[Your report need not contain original research results, though you must use some original research papers (not just review articles or books) as resources.]*