# Navigability of configuration model graphs

Alexander Käll[*]

June 2023

## Abstract

This thesis explores the navigability of random graphs, in particular how an algorithm using only local information performs in configuration model random graphs with either power-law or constant degree distributions. The navigability of these graphs is measured by the average number of steps the algorithm takes and its failure rate. We find that the navigability of a graph seem to depend on average degree but also on how these degrees are distributed. The average number of steps the algorithm takes seems inversely proportional to the average degree.

---

[*]Postadress: Matematisk statistik, Stockholms universitet, 106 91, Sverige. E-post: alexanderkall42@gmail.com. Supervisor: Daniel Ahlberg, Johannes Heiny.