

# REPORT K-SHELL DECOMPOSITION

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November 21, 2018

## 1 INTRODUCTION

K-Shell decomposition helps in finding out the shell numbers of various nodes in a particular graph. This is particularly helpful in finding out the core of any graph. With the help of this knowledge we are working on ways to reach the core of the graph from any random point with only local knowledge to rely upon.

## 2 Literature Review

### 2.1 The H-index of a network node and its relation to degree and coreness

This paper discusses the fact how degree and coreness are related with each other with the help of a property called H-index. H-index is the property of a node that is defined by the relationship given below :

Let  $G(V, E)$  denote a graph  $G$  with  $V$  vertices and  $E$  edges making it up. Now choosing any particular node let the degree of the node is  $k_i$  and the degrees of its neighbours are  $k_{(j_1)}, k_{(j_2)}, k_{(j_3)}, \dots, k_{(j_{k_i})}$