

The network properties of episodic graphs

Yuwen Zhuang

Department of Computer Science and Engineering, Ohio State University (OSU)

Vishnu Sreekumar

Department of Psychology, Ohio State University (OSU)

Mikhail Belkin

Department of Computer Science and Engineering, Ohio State University (OSU)

Simon Dennis

Department of Psychology, Ohio State University (OSU)

Abstract: We present statistical analyses of the small world properties for two particular types of episodic graphs. One is from the paragraph space of the Internet Movie Database (IMDb) and the other is from images collected as subjects engaged in their activities of daily living. We show that they have a small-world structure which is characterized by sparse connectivity, short average path lengths between nodes, and high global clustering coefficient. However, the degree distribution analyses show that they are not scale-free graphs. For the analyses, we selected edges from different proportions to construct the networks, hence, a series of analyses reveal the growth style of these two episodic graphs.

Keywords: Small World; Episodic Graphs; Scale-Free Graphs; Internet Movie Database (IMDb);