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Community Structure in Online Collegiate Social Networks

AMANDA TRAUD, University of North Carolina at Chapel Hill, ERIC KELSIC, Harvard University, PETER MUCHA, University of North Carolina at Chapel Hill, MASON PORTER, University of Oxford — Online social networking sites have become increasingly popular with college students. The networks we studied are defined through “friendships” indicated by Facebook users from UNC, Oklahoma, Caltech, Georgetown, and Princeton. We apply the tools of network science to study the Facebook networks from these five different universities at a single point in time. We investigate each single-institution network’s community structure, which we obtain through partitioning the graph using an eigenvector method. We use both graphical and quantitative tools, including pair-counting methods, which we interpret through statistical analysis and permutation tests to measure the correlations between the network communities and a set of characteristics given by each user (residence, class year, major, and high school). We also analyze the single gender subsets of these networks, and the impact of missing demographical data. Our study allows us to compare the online social networks for the five schools as well as infer differences in offline social interactions. At the schools studied, we were able to define which characteristics of the Facebook users correlate best with friendships.

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