

Dynamic community finding in Social Networks

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Abstract

Graph-based problems, and especially those based on Social Networks Analysis (SNA), are one of the hot topics research areas in Computer science, due to the popularity and fast growing of these kind of applications and the easiness to information access. One of the current problems in SNA is how to find communities in a network. A community can be defined as a cluster, or subgraph, that contains a set of nodes that share some common features or a pattern. This kind of methods, named Community Finding Problems, comes from different areas as Graph Theory, SNA, Computational Intelligence or Physics among many others. The interest in Community Finding Problems on Social Networks (SN) have experienced an increasing attention over the last years due to the straightforward access to the information stored in these sources, which can be done through APIs or bots. Once the information is gathered and pre-processed, is theoretically simple to apply different kind of algorithms to analyse the knowledge structure, extracting patterns that can be later used in Decision Support Systems, Recommender Systems, etc. However, when this kind of algorithms are applied over some specific domains (e.g. radical networks, polarized networks, etc.), some problems related to the amount of available, the quality of this information, and the dynamics of these communities where the information (both connections and nodes can be change through time), needs to be adequately handle. This talk will provide an introduction to some basics on Social Networks Analysis, and some popular algorithms and tools used in the area of Community Finding Detection, paying special attention to the dynamic community finding algorithms.

SHORT Biography



Dr. David Camacho is currently working as Professor at Technical University of Madrid (Department of Information Systems), and leads the Applied Intelligence & Data Analysis (<https://aida.ii.uam.es>) group at this University. AIDA is a specialized group in the application and new development on both, artificial intelligent and data mining techniques, the main research areas are: Computational Intelligence, Evolutionary Computation, Swarm Intelligence (ACO, PSO), Clustering/Classification, Social Network Analysis, Big Data, Cybercrime/Cyber intelligence, amongst others. He has published more than 250 journals, books, and conference papers, and participated/led more than 40 research projects (National and European: DG Justice, ISFP, Erasmus+, and H2020).