Computational Intelligence approaches for Graph-based problems analysis

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        The Hong Kong Polytechnic University

Abstract
Computational intelligence, as those ones that comes from Evolutionary Computation
or Swarm Intelligence, is a set of nature-inspired computational algorithms that have
been successfully applied to address complex real-world problems, such as Social
Networks Analysis. One of the current problems of this graph-based problems, 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.
Any Community Finding method can be seen as a Data Mining process. Once the
information is gathered and pre-processed, is theoretically simple to apply different
kind of algorithms to analyse the knowledge structure, to later extract patterns.
However, when this kind of algorithms are applied over some specific domains (e.g.
radical networks), some problems related to both the amount of available and the
quality of information, can be a challenge to the application of traditional
Computational Intelligence methods. 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. The talk will briefly analyse the main
challenges and problems related to small networks (with low amount of trustworthy
data).

About the Speaker
Dr David Camacho is currently working as Associate Professor at Universidad Autónoma de Madrid (Computer Science Department), 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).

All are welcome!
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