

Maria Chiara Caschera, Arianna D'Ulizia, Fernando Ferri, Patrizia Grifoni, **MONDE: a method for predicting social network dynamics and evolution**, Evolving Systems, Springer Berlin Heidelberg, 2018

Abstract: This paper proposes a method for predicting dynamics and evolution of social networks (MONDE). The dynamics and the evolution are related to relationships and potentials for collaboration and knowledge sharing among members of a social network according to their topics of interests. MONDE combines a multi-layer Hidden Markov Model with a genetic algorithm for modeling and predicting behaviors of social groups at macro (i.e. network), meso (i.e. group) and micro (i.e. individual) levels. The evolution is forecasted by analyzing users according to different features and their participation in the different groups of interest. This model was tested using data from two communities, i.e. the Sha.p.e.s. community and Twitter users lists. The obtained results underline a good prediction performance in both the short-term dynamics and long-term evolution