1.	Record Nr.	UNINA9910300399103321
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	Titolo	Algorithms and Dynamical Models for Communities and Reputation in Social Networks / / by Vincent Traag
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014
	ISBN	3-319-06391-X
	Edizione	[1st ed. 2014.]
	Descrizione fisica	1 online resource (237 p.)
	Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
	Disciplina	006.312
	Soggetti	Physics
		Game theory
		Economics - Sociological aspects
		Mathematics
		Social sciences
		Applications of Graph Theory and Complex Networks
		Game Theory, Economics, Social and Behav. Sciences
		Organizational Studies, Economic Sociology
		Mathematics in the Humanities and Social Sciences
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	"Doctoral Thesis accepted by the Catholic University of Louvain, Belgium."
	Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
	Nota di contenuto	Introduction -- Part I Communities in Networks -- Community Detection -- Scale Invariant Community Detection -- Finding Significant Resolutions -- Modularity with Negative Links -- Applications -- Part II Social Balance & Reputation -- Social Balance -- Models of Social Balance -- Evolution of Cooperation -- Ranking Nodes Using Reputation.
	Sommario/riassunto	A persistent problem when finding communities in large complex networks is the so-called resolution limit. This thesis addresses this issue meticulously, and introduces the important notion of resolution-limit-free. Remarkably, only few methods possess this desirable property, and this thesis puts forward one such method. Moreover, it

discusses how to asses whether communities can occur by chance or not. One aspect that is often ignored in this field is treated here: links can also be negative, as in war or conflict. Besides how to incorporate this in community detection, it also examines the dynamics of such negative links, inspired by a sociological theory known as social balance. This has intriguing connections to the evolution of cooperation, suggesting that for cooperation to emerge, groups often split in two opposing factions. In addition to these theoretical contributions, the thesis also contains an empirical analysis of the effect of trading communities on international conflict, and how communities form in a citation network with positive and negative links.