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Keynote:

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Presentation title: The Colors of Social Ties

Luca Maria Aiello is a Senior Research Scientist in the Social Dynamics group at Bell Labs in Cambridge, UK and Resarch Fellow of the ISI Foundation in Torino, Italy. He received his PhD in Computer Science from the University of Torino in 2012 and he has been a Research Scientist at Yahoo Labs for almost 5 years. He conducts interdisciplinary research in network science, computational social science, and urban informatics. His work has been covered by more than 200 news articles published by prestigious news outlets worldwide including Wired, Wall Street Journal, and BBC. He was General Chair of SocInfo in 2014 and covered different organizational roles in ICWSM, ACM Hypertext, ACM Multimedia, UMAP. He is among the founding members of [GoodCityLife.org](http://goodcitylife.org/) (<http://goodcitylife.org/>), a global network of scientist with the goal of giving a good life to city dwellers.

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Abstract: Graphs are powerful abstractions of interactions between entities that has allowed researchers to build rigorous models to describe the evolution of complex systems, especially social networks, and the dynamics of the phenomena that these systems support, such as the process of information exchange. The explosion of data from online social media has encouraged the often uncritical adoption of the notion of social tie as the atomic interaction quantum of any social network structure. However, links are not all created equal and, similarly, the information that spreads in networks is variegated in nature. In our work we aim at reaching a better understanding of the nature of social structures and of the information that is carried along them. We look at how a social network evolves by analyzing full longitudinal traces of link creation in large-scale social platforms, showing how the process of bonding can be biased by algorithmic artifacts (such as friendship recommender systems) that influence the creation of links in a way that can change the global structural properties of the network. Moreover, by operationalizing theories from social science, we provide evidence that links might be expression of very different social processes that reflect fundamentally different structural properties of the social graph. Then, by illustrating two specific case studies (the production of quality content and the diffusion of deviant content) we will show how content type, link types, and overall network structure are all connected and have effect on each another. With our work, we hope to convey the message that a more nuanced description of social structures and processes is needed to better understand human interactions and societies, both online and offline.