A Survey on Big Data and Collective Intelligence

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Abstract. The collection and accumulation of Big Data is a fact for a plethora of scenarios nowadays. Sources such as the ever-increasing diversity sensors as well as the content created by humans have contributed to the Big Data's enormous size and characteristics. Making sense of these data has primarily rested upon Big Data analysis algorithms. Still, in one too many cases the effectiveness of these algorithms is hampered by the very nature of Big Data: analogue, noisy, implicit, and ambiguous. Enter Collective Intelligence: the capability of interconnected intelligences achieving ameliorated results in their activities than each of the single intelligences creating the collective solely would. Accordingly, this work presents existing research on Big Data's key pillars as well as a comprehensive account of the state-of-the-art methods for Collective Intelligence in prominent disciplines. The work is concluded by a summary including the challenges and perspectives of the common ground between the directions of Big Data and Collective Intelligence.

Keywords: Big Data; Collective intelligence; Cloud computing; NoSQL; Distributed systems; Synergetic networks.