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Machine Learning and Intelligent Communications

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Preface

Along with the fast development of mobile communications technologies, the amount of high-quality wireless services required is increasing exponentially. According to the prediction of Cisco VNI Mobile Forecast 2016, global mobile data traffic will increase nearly eightfold between 2015 and 2020, and mobile network connection speeds will increase more than threefold by 2020. Hence, there are still big gaps between future requirements and current communication technologies, even using 4G/5G. How to integrate the limited wireless resources with some intelligent algorithms or schemes and boost potential benefits is the focus of the conference. As an emerging discipline, machine learning is a subfield of computer science that evolved from the study of pattern recognition and computational learning theory in artificial intelligence, and explores the study and construction of algorithms that can learn from and make predictions about complicated scenarios. In communication systems, the previous/current radio situations and communication paradigms should be well considered to obtain a high quality of service (QoS), such as the available spectrum, limited energy, antenna configurations, and heterogeneous properties. Machine learning algorithms facilitate the analysis and prediction of complicated scenarios, and thus to make an optimal actions in OSI seven layers. We hope the integrating of machine-learning algorithms into communication systems will improve the QoS and make the systems smart, intelligent, and efficient.

December 2016

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