


Fields Institute Communications

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Data Science and Optimization

 Springer

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Preface

Data science and optimization are increasingly intertwined as both focus on developing computational and methodological approaches to tackling large and otherwise complex datasets. Optimization is primarily concerned with accuracy, computational efficiency, and robustness while data science emphasizes achieving effective results on real datasets. Although some data science approaches involve the implicit optimization of objective functions, there remains a dearth of work that brings advanced optimization techniques to bear on data science problems. The goal of the Fields Focus Program on Data Science and Optimization held in November 2019 at the Fields Institute in Toronto, was to bring together researchers in data science and optimization, both theoretical and applied, in an effort to bridge the fields and stimulate cross-disciplinary interaction and collaboration.

We would like to thank the contributors for their high-quality papers, as well as the referees for their thorough reviews. We are grateful to the Fields Institute for the generous funding provided for the Fields Focus Program on Data Science and Optimization. It is a pleasure to acknowledge the excellent support provided by the Fields Institute; in particular, we would like to offer special thanks to Clifton Cunningham, Brittany Camp, Bryan Eelhart, Ian Hambleton, Deirdre Haskell, Huaxiong Huang, Kumar Murty, and Tom Salisbury.

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