

Mathematical Foundations of Data Science: What a wild ride!

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The [CRM thematic program Mathematical Foundations of Data Science](#) officially ended only a few months ago, in June. What a wild ride has been... and what an incredible success!

The initial idea of the program came in 2021 from Tim, who initially wanted to co-organize a workshop on optimization and data science with the CRM. We decided to go bigger and instead submitted a proposal for a whole thematic program, which was enthusiastically approved and generously supported by the CRM.

The program included **four core CRM workshops, two Aisenstadt Chair lectures, one spring school, three IVADO workshops and a satellite workshop in Ottawa.** These activities featured a wide array of relevant and timely topics in the modern data science landscape, falling within the broad categories of machine learning, optimization, approximation theory, numerical analysis, probability, statistics... and beyond!



Figure 1. Word cloud summarizing the main themes featured in the thematic program

We were lucky to have a crowd of high-caliber, world-class researchers participating in the various activities of the program. There are too many to list here, but we want to mention some key people: **two Aisenstadt Chairs** (Francis Bach and Katya Scheinberg), **ten CRM-Simons**



Figure 2. Participants of the Spring School "Mathematical Foundations of Data Science"

scholars in residence (Ben Adcock, Gérard Ben Arous, James V. Burke, Maia Fraser, Michael Friedlander, Diane Guignard, Tias Guns, Mark Iwen, Zhenyu Liao, and Carola-Bibiane Schönlieb), and the **spring school instructors** (Claire Boyer, Nathan Doumèche, and Andre Milzarek). What made the program special was the presence, work and energy of all these people, together with many other excellent speakers and participants at all career levels, from established and early career scientists to talented and enthusiastic students.

We could spend many words on the incredibly strong scientific contributions of the program, but here we would like to emphasize once more the aspect that made all these years of work worth it: the people. Seeing senior and junior participants interacting during Q&As and coffee breaks, chatting with old and new colleagues over lunch, having a good time in front of a pint with program participants in the evening... these are special memories that we won't forget easily.

We would like to conclude by thanking **Virginie Leduc** and **Octav Cornea** from the CRM for the incredible support (both logistical and moral) and the members of the **organizing**

committee (Ben Adcock, Margarida Carvalho, Michael Friedlander, Diane Guignard, Mark Iwen, Adam Oberman, Courtney Paquette, Elliot Paquette, Utsav Sadana and Carola-Bibiane Schönlieb) for their enthusiasm and dedication. Last but not least, we'd like to thank each other as co-chairs of the program for being ideal partners, team players and friends, enabling the great success that this program turned out to be. *Ad maiora!*