Radu-Alexandru Dragomir

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Research interests

I am interested in large-scale continuous optimization with a broad range of applications in signal processing and data analysis. I particularly focus on exploring methods beyond the standard Euclidean geometry, such as Bregman and Riemannian schemes. I also work on tools for computer-aided analyses of first-order algorithms, known as *performance estimation problems*.

Education and academic positions

Post-doctoral fellow, Université Catholique de Louvain, Belgium 2021-now
Advised by Yurii Nesterov.

PhD student, Université Toulouse Capitole & ENS Paris 2018-2021
Bregman First-Order Methods for Relatively-Smooth Optimization.
Advised by Jérôme Bolte and Alexandre d'Aspremont.

MSc Mathematics, Vision, Learning (MVA), ENS Paris-Saclay 2017-2018
Classes in Convex Optimization, Machine Learning, Statistics, Computer Vision.

Engineer's degree, Ecole polytechnique, Paris-Saclay 2014-2017
Computer Science and Applied Mathematics, Machine Learning track.

Work Experience

Research assistant, University of California, Berkeley Apr-Aug 2017
Using supervised learning for modeling and optimizing wind farm production.
Collaboration with EDF Renewable Energy. Advised by Laurent El Ghaoui.

Intern, Symptify, Miami Jun-Aug 2016
Front-end web development.

Publications

- R.A. Dragomir, M. Even, H. Hendrikx (2021). Fast Stochastic Bregman Gradient Methods: Sharp Analysis and Variance Reduction, 2021. *International Conference on Machine Learning.*
- R.A. Dragomir, A.B. Taylor, A. d'Aspremont, J. Bolte. "Optimal Complexity and Certification of Bregman First-Order Methods", 2021. *Mathematical Programming.*
- R.A. Dragomir, A. d'Aspremont, J. Bolte. "Quartic First-Order Methods for Low Rank Minimization", 2021. *Journal of Optimization Theory and Applications.*

Teaching

- Lecturer, *Numerical Analysis*, L1, **Université Paul Sabatier**, Toulouse 2019-2020
- Teaching assistant, *Convex Optimization*, M2, **ENS Paris-Saclay** 2018-2020
- Lecturer, *Linear Algebra*, L1, **Université Paul Sabatier**, Toulouse 2018-2019

Talks

- Online presentation, University of Genova. *Stochastic First-Order Methods for Relatively-Smooth Optimization.* 2021
- SIERRA team seminar, Paris. *Optimal Complexity and Certification of Bregman First-Order Methods.* 2020
- Invited talk, ICCOPT, Berlin. *Quartic First-Order Methods for Low Rank Minimization.* 2019

Reviewing

Mathematical Programming, Journal of Optimization Theory and Applications, Mathematics of Operations Research, Computational Optimization and Applications.

Computer skills

- **Advanced:** Julia, Python, Matlab
- **Basic knowledge:** C/C++, Javascript

Languages

- **French:** Native
- **Romanian:** Native
- **English:** Fluent (Toefl score 112/120)
- **Spanish:** Working knowledge