David Saulpic

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Employment and Education

2022-   **Post-Doctorate Researcher**, *Vienna University*.
Hosted by Pr. Monika Henzinger

2020-2022   **Science Facilitator**, *Cité des Sciences et de l'Industrie*, Paris.

2019-2022   **PhD Student**, *Sorbonne Université*, Paris.
Under the supervision of Christoph Dürr and Vincent Cohen-Addad

2018   **M.Sc.**, *École Normale Supérieure*, Paris.
Master Parisien de Recherche en Informatique (MPRI).

2016   **B.Sc.**, *École Normale Supérieure*, Paris.
Bachelor in Informatics, with a minor in mathematics.

2013   **International Olympiads in Informatics**.
Member of the French Team

Selected Publications

2022   Towards Optimal Lower Bounds for k-median and k-means Coresets, *STOC*.
with Vincent Cohen-Addad, Kasper Green Larser and Chris Schwiegelshohn

2021   A New Coreset Framework for Clustering, *STOC*.
with Vincent Cohen-Addad and Chris Schwiegelshohn

2019   Linear-Time Approximation Schemes for Clustering in Doubling Metrics, Journal of the A.C.M, preliminary version appeared at *FOCS*.
with Vincent Cohen-Addad and Andreas Emil Feldmann.

Popular Science and Teaching

2020-2022   **Cité des sciences et de l'Industrie**, *Paris*, Science facilitator.

2018-2019   **Teaching Assistant**, *Sorbonne Université*, Paris.

2015   **Intervention in High School**, Scientific mediations about graphs, algorithms, mathematics for high school students.

2015-2017   **Oral examinations (colles) in preparatory classes**, Oral math examinations in *MPSI*, Lycée Louis-le-Grand.

2013-2018   **France-IOI**, Teaching in training camp in Algorithm for students preparing the International Olympiads in Informatics (IOI).

Service

Reviewer, ACM Transaction on Algorithms, Theoretical Computer Science, SODA, ICALP, ICML, SOCG, SOSA, ESA, Approx, LATIN, SIROCCO, STACS, WG.

2021-2022   **Elected member of the Faculty Council**, Sorbonne Université, Faculté des Sciences, Paris.

2020   **French PhD Day in Computer Science**, Local point of contact for the PhD students day of the Société Française d'Informatique (SIF).

2018   **French PhD Day in Computer Science**, Co-Organizer of the PhD students day of the Société Française d'Informatique (SIF).

All Refereed Publications

2022 Scalable Differentially Private Clustering via Hierarchically Separated Trees.
Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD).
with Vincent Cohen-Addad, Alessandro Epasto, Silvio Lattanzi, Vahab Mirrokni, Andres Munoz, Chris Schwiegelshohn and Sergei Vassilvitskii.

2022 Community Recovery in the Degree-Heterogeneous Stochastic Block Model.
Proceedings of Thirty Fifth Conference on Learning Theory (COLT).
with Vincent Cohen-Addad and Frederik Mallmann-Trenn.

2022 A Massively Parallel Modularity-Maximizing Algorithm With Provable Guarantees.
Proceedings of the 2022 ACM Symposium on Principles of Distributed Computing (PODC).
with Vincent Cohen-Addad and Frederik Mallmann-Trenn.

2022 Towards Optimal Lower Bounds for k-median and k-means Coresets.
Proceedings of the 54th ACM Symposium on Theory of Computing (STOC).
with Vincent Cohen-Addad, Kasper Green Larser and Chris Schwiegelshohn.

2022 An Improved Local Search Algorithm for k-Median.
Proceedings of the 32nd Annual ACM-SIAM Symposium on Discrete Algorithms (SODA).
with Vincent Cohen-Addad, Anupam Gupta, Lunjia Hu and Hoon Oh.

2021 Improved Coresets and Sublinear Algorithms for Power Means in Euclidean Spaces.
Proceedings of the conference on Neural Information Processing Systems (NeurIPS) - Spotlight presentation.
with Vincent Cohen-Addad and Chris Schwiegelshohn.

2021 A New Coreset Framework for Clustering.
Proceedings of the 53rd ACM Symposium on Theory of Computing (STOC).
with Vincent Cohen-Addad and Chris Schwiegelshohn.

2020 On the Power of Louvain for Graph Clustering.
Proceedings of the conference on Neural Information Processing Systems (NeurIPS).
with Vincent Cohen-Addad, Adrian Kosowski and Frederik Mallmann-Trenn.

2020 Polynomial Time Approximation Schemes for Clustering in Low Highway Dimension Graphs.
Journal of Computer and System Sciences – Special issue on ESA 2020. Preliminary version appeared in the 28th Annual European Symposium on Algorithms (ESA 2020).
with Andreas Emil Feldmann.

2019 Fully Dynamic Consistent Facility Location.
Proceedings of the conference on Neural Information Processing Systems (NeurIPS).
with Vincent Cohen-Addad, Niklas Hjuler, Nikos Parotsidis and Chris Schwiegelshohn.

2019 Linear-Time Approximation Schemes for Clustering in Doubling Metrics.
Journal of the A.C.M. – Proceedings of the 60th Annual IEEE Symposium on Foundations of Computer Science (FOCS).
with Vincent Cohen-Addad and Andreas Emil Feldmann.

2019 Dominating Sets and Connected Dominating Sets in Dynamic Graphs.
36th International Symposium on Theoretical Aspects of Computer Science (STACS 2019).
with Niklas Hjuler, Giuseppe F. Italiano and Nikos Parotsidis.

2018 Polynomial-Time Approximation Schemes for k-center, k-median, and Capacitated Vehicle Routing in Bounded Highway Dimension.
Proceedings of the 26th Annual European Symposium on Algorithms (ESA).
with Amariah Becker and Phil Klein.

2017 A Quasi-Polynomial-Time Approximation Scheme for Vehicle Routing on Planar and Bounded-Genus Graphs.
Proceedings of the 25th Annual European Symposium on Algorithms (ESA).
with Amariah Becker and Phil Klein.