Blerina SINAIMERI

Date of birth: 08/07/1981

bsinaimeri@luiss.it

Professional Address:
Viale Romania, 32 - 00197
Rome, Italy

Academic appointments

02/2021– Associate Professor
LUISS – Libera Università Internazionale degli Studi Sociali Guido Carli
Department of AI, Data and Decision Sciences

10/2025– Director of the Graduate Program in Data Science and Management
LUISS – Libera Università Internazionale degli Studi Sociali Guido Carli
Department of AI, Data and Decision Sciences

10/2015–02/2021 Chargée de recherche
INRIA Grenoble - Rhône-Alpes
European Research team in Algorithms and Biology, Formal and Experimental (ERABLE) team

07/2019–07/2020 Visiting Researcher
LUISS – Libera Università Internazionale degli Studi Sociali Guido Carli

01/2018–03/2018 Visiting Researcher
Computer Science Department, Sapienza University of Rome.

02/2012–09/2015 Postdoc
INRIA Grenoble - Rhône-Alpes – ERABLE team

02/2010–02/2012 Postdoc
Computer Science Department, Sapienza University of Rome.

Education

22/01/2010 Ph.D. in Computer Science, (evaluation : outstanding)
Sapienza University of Rome – Computer Science Department – Rome – Italy
Thesis: "Structures of diversity"

5/07/2006 Laurea degree in Computer Science, (Summa cum Laude)
Sapienza University of Rome – Computer Science Department – Rome – Italy

Professional Responsibilities

I. **Evaluation Committees**

2022- Member of the Council of the Italian Chapter of the EATCS (European Association for Theoretical Computer Science);https://eatcs.org/index.php/italian-chapter.

2022- Member of the Scientific Board of the Ph.D. in Cybersecurity, a joint Ph.D. program between Luiss and Sapienza https://phd.uniroma1.it/web/CYBERSECURITY_nD3859_EN.aspx.

2019-2021 Elected Member of the Inria Evaluation Committee – The Evaluation Committee is a largely autonomous committee composed of selected Inria scientists and outside experts. It is at the forefront of scientific assessment at the Institute. It constitutes the core of recruitment assessment committees, which also include outside experts nominated by general management, and of internal promotion committees. In cooperation with the Research Department, it coordinates the external evaluation of Inria project teams in each field of research. (For more information see `https://www.inria.fr/institut/organisation/instances/commission-d-evaluation`

II. **Ph.D. Committees**

2022 Referee of the Ph.D. Thesis of Mariella Bonomo, Ph.D. in in Information and Communication Technologies, Department of Engineering, University of Palermo (Ph.D. Thesis Title "Knowledge Extraction from Biological and Social Graphs").

2021 Member of the jury of the Ph.D. thesis defense of Thi-Viet-Ha Nguyen, Ph.D. in Computer Science (Ph.D. Thesis Title "Graph problems motivated by (low and high) resolution models of large protein assemblies").

2019 Member of the jury of the Ph.D. thesis defense of Aikaterini Karanasiou, Ph.D. in Computer Science, Control and Geoinformation (Ph.D. Thesis Title "Robustness in Directed Graphs").

2019 Member of the jury of the Ph.D. thesis defense of Pierre Marijon, Ph.D. in Bioinformatics (Ph.D. Thesis Title "Novel components at the periphery of long read genome assembly tools").

2016 Referee of the Ph.D. Thesis of Nilakanta Paudel, Doctoral Thesis in Mathematics, University Roma 3 (Ph.D. Thesis Title "Graph Algorithms for Analytics and Security").

2016 Member of the supervision committee (*Comité de suivi de la thèse*) of Wandrille Duchemin (Ph.D. Thesis Title "Phylogénie des dépendances et dépendances des phylogénies dans les gènes et les génomes"). The objective of the supervision committee is to monitor the progress of research work and the professional project of the doctoral student.

2015 Member of the supervision committee (*Comité de suivi de la thèse*) of Bastien Cazaux (Ph.D Thesis Title "Approximation of superstring, indexation and genome assembly").

III. **Organization of scientific meetings**

2023 Organizer: OLISSIPO School on Computational phylogenetics to analyse the evolution of cells and communities - Tree for a Tango School, Lisbon, Protugal `https://olissipo.inesc-id.pt/tree-tango-school/`.

2021 Symposium organizer: Models4Life Symposium (Virtual meeting June 2021) hosted by the Albanian Academy of Sciences, Tirana, Albania. `https://models4lifealbania.wixsite.com/2021`

Editorial Duties

- I am in the **Editorial Board** of the following international journals:
  - Information Processing Letters (`https://www.sciencedirect.com/journal/information-processing-letters`)
  - Theoretical Computer Science (`https://www.sciencedirect.com/journal/theoretical-computer-science`)
- I am or was a member of the Program Committee for *ECCB 2026* (25th European Conference on Computational Biology, *SPIRE 2025* (32th International Symposium on String Processing and Information Retrieval), *SPIRE 2024* (31th International Symposium on String Processing and Information Retrieval), *SPIRE 2023* (30th International Symposium on String Processing and Information Retrieval), *WABI* 2023 (23th Workshop on Algorithms in Bioinformatics), *IWOCA* 2022 (32th International Workshop on Combinatorial Algorithms), *CIAC* 2022 (13th International Conference on Algorithms and Complexity), *SPIRE 2021* (28th International Symposium on String Processing and Information Retrieval), *CIAC* 2021 (12th International Conference on Algorithms and Complexity), *WEPA* 2020 (International Workshop on Enumeration Problems and Applications) and *SeqBIM* 2020 (Sequences en Bioinformatique, Mathematiques, Bioinformatique), *SeqBIM* 2019 (Sequences en Bioinformatique, Mathematiques, Bioinformatique), *WABI* 2019 (19th Workshop on Algorithms in Bioinformatics), *IWOCA* 2019 (30th International Workshop on Combinatorial Algorithms) and *WALCOM* 2016 (10th International Workshop on Algorithms and Computation).

Awards

2010 **Winner of the 2010 Italian Chapter EATCS Award for the best Ph.D. thesis in theoretical computer science.**

2009 **Best PhD Student paper of the year**, CS Department, Sapienza University of Rome.

Research visits

july.2022	Instituto Superior Técnico de Lisboa (IST), Universidade de Lisboa, Lisbon, Portugal (1 week).
jul. 2019	LUISS – Libera Università Internazionale degli Studi Sociali Guido Carli, Rome, Italy (1 year).
mar.2019	Instituto Superior Técnico de Lisboa (IST), Universidade de Lisboa, Lisbon, Portugal (2 weeks).
sep.2018	Instituto Superior Técnico de Lisboa (IST), Universidade de Lisboa, Lisbon, Portugal (1 week).
apr.2018	Instituto Superior Técnico de Lisboa (IST), Universidade de Lisboa, Lisbon, Portugal (2 weeks).
jan.2018	Computer Science Department, Sapienza University of Rome, Italy (3 months).
jul.2017	Instituto Superior Técnico de Lisboa (IST), Universidade de Lisboa, Lisbon, Portugal (10 days).
sep. 2016	Dept. of Mathematics and Computer Science, Università degli Studi di Palermo, Italy (1 week).
mar.2016	Instituto de Matemática e Estatística Universidade de São Paulo (USP), Brasil (1 week).
feb.2015	Instituto de Matemática e Estatística Universidade de São Paulo (USP), Brasil (1 week).
mar.2014	Instituto de Matemática e Estatística Universidade de São Paulo (USP), Brasil (1 week).
mar.2014	Laboratório Nacional de Computação Cientifica, Petropólis, Brasil (1 week).
apr.2013	Laboratório Nacional de Computação Cientifica, Petropólis, Brasil (1 week).
apr.2013	Centro de Modelamiento Matemático dela Universidad de Chile, Santiago, Chile (1 week).
jan.2013	Instituto de Engenharia de Sistemas e Computadores (INESC), Lisbon, Portugal (1 week).

Research projects and Grants

I. **Grant as Principal Investigator**

2016–2017 Iceberg – "Integrating Cophylogeny in the analysis of ecological networks",
Funding: Project founded by LBBE, 5K Euro.
Role: **Principal investigator**

II **Grants as Investigator**

2022 – 2025 "EXPAND: scalable algorithms for EXPloratory Analyses of heterogeneous and dynamic Networked Data".
Funding: PRIN national research projects 2022.
Role: **Work Package Leader**

2022 – 2025 "Data4Innovation - Data ecosystem governance toward enhancing data sharing for innovation: implications for organizations".
Funding: PRIN national research projects PNRR 2022.
Role: **Investigator**

2019 – 2023 "AHeAD: efficient Algorithms for HArnessing networked Data".
Funding: PRIN national research projects 2017.
Role: **Investigator**

2016–2020 ASTER – "Algorithms and software for third generation RNA sequencing",
Funding: Project founded by the French National Research Agency (ANR-16-CE23-0001), 562K Euro.
Role: **Work Package Leader**

2015–2017 "Mathematical tools to analyse the arms race between organisms and their parasites",
Funding: Project founded by the The Royal Society, 13K Euro.
Role: **Investigator**

2012–2015 "SISYPHE: Species Identity and SYmbiosis Formally and Experimentally explored",
Funding: Project founded by the European Research Council (ERC) Advanced Grant, (ERC-AG-PE6-ERC) 2,3M Euro.
Role: **Investigator**

2012–2016 Colib'read – "Methods for efficient detection of biological information from non assembled HTS data.",
Funding: Project founded by the French National Research Agency (ANR12-BS02-0008), 362K Euro.
Role: **Investigator**

2008–2010 "Compression limits in combinatorics and computational complexity",
Funding: Project founded by the Progetti Universitari 2007, Sapienza University of Rome, Italy 40K Euro.
Role: **Investigator**

Spoken Languages

Albanian	(native language)
Italian	(fluent)
English	(fluent)
French	(intermediate)

Scientific Publications

The following publications are in chronological order. Except for the cases where my name appears in bold, the authors are in alphabetical order. In the latter case, the first authors are indicated by a "*".

I. **Refereed International Journals**

1. M. Patrignani, G. Dionisi, B. Sinaimeri and T. Calamoneri: VIRI: a visualization tool for tree reconciliations. **BMC Bioinformatics** 26, 241, 2025.
2. A. Monti and B. Sinaimeri: On star-k-PCGs: exploring class boundaries for small k values. **Acta Informatica** 62, 17, 2025.
3. A. Monti, B. Sinaimeri, Effects of graph operations on star pairwise compatibility graphs, **The Computer Journal**, Volume 68, Issue 10, October 2025, Pages 1355,Äì1363,
4. I. Finocchi, R. L. Garcia, B. Sinaimeri, From Stars to Diamonds: Counting and Listing Almost Complete Subgraphs in Large Networks, **The Computer Journal**, Volume 67, Issue 6, Pages 2151–2161, 2024.
5. B. Sinaimeri, L. Urbini, M.-F. Sagot, C. Matias, Cophylogeny Reconstruction Allowing for Multiple Associations Through Approximate Bayesian Computation, **Systematic Biology**, Volume 72, Issue 6, Pages 1370–1386, 2023.
6. Y. Wang, A. Mary, M.-F. Sagot and B. Sinaimeri, A General Framework for Enumerating Equivalence Classes of Solutions, **Algorithmica** 85, 3003–3023, 2023.
7. A. Marino, B. Sinaimeri, E. Tronci, and T. Calamoneri, STARGATE-X: a Python package for statistical analysis on the REACTOME network, **Journal of Integrative Bioinformatics**, vol. 20, no. 3, pp. 2022-2029, 2023.
8. Y. Wang, A. Mary, M.-F. Sagot and B. Sinaimeri, Efficiently sparse listing of classes of optimal cophylogeny reconciliations, **Algorithms for Molecular Biology** 17 (1), 1-16, 2022.
9. T. Calamoneri, A. Monti and B.Sinaimeri, On the domination number of -constrained de Bruijn graphs, **Discrete Mathematics & Theoretical Computer Science** 24, 2022.
10. V. Acuña, R. Grossi, G. Italiano, L. De Lima, L. Pepé Sciarria, M.-F. Sagot and B. Sinaimeri, A family of tree-based generators for bubbles in directed graphs. **J. Graph Algorithms Appl.** 25(1): 563-580, 2021.
11. T. Calamoneri, M. Gastaldello, A. Mary, M.-F. Sago, B. Sinaimeri, Algorithms for the quantitative Lock/Key model of cytoplasmic incompatibility, **Algorithms for Molecula Biology**, 15 (14), 2020.
12. A. Monti and B. Sinaimeri, String factorisations with maximum or minimum dimension, **Theoretical Computer Science**, 842: 65-73, 2020.
13. Y. Wang, A. Mary, M.-F. Sagot and B. Sinaimeri, Capybara: equivalence ClAss enumeration of coPhylogenY event-BAsed ReconciliAtions, **Bioinformatics**, 36(14): 4197-4199, 2020.

14. V. Acuña, R. Grossi, G. Italiano, L. De Lima, R. Rizzi, G. Sacomoto, M.-F. Sagot and B. Sinaimeri. On Bubble Generators in Directed Graphs, **Algorithmica**, 82(4): 898-914, 2020.
15. T. Calamoneri, A. Monti and B.Sinaimeri; Co-divergence and tree topology, **Journal of Mathematical Biology**, Vol. 79, Issue 3, pp 1149–1167, 2019.
16. L. Urbini, **B. Sinaimeri**, C. Matias and M.-F. Sagot, Exploring the Robustness of the Parsimonious Reconciliation Method in Host-Symbiont Cophylogeny, **IEEE/ACM Transactions on Computational Biology and Bioinformatics**, 16(3): 738-748, 2019.
17. K. Huber, V. Moulton, M.-F. Sagot, B. Sinaimeri: Exploring and Visualising Spaces of Tree Reconciliations, **Systematic Biology**, 68 (4), 607-618, 2019.
18. A. Monti and B. Sinaimeri, On variants of Vertex Geography on undirected graph, **Discrete Applied Mathematics**, 251: 268–275, 2018.
19. K. Huber, V. Moulton, M.-F. Sagot, B. Sinaimeri: Geometric medians in reconciliation spaces of phylogenetic trees, **Information Processing Letters**, 136, 96-101, 2018.
20. L. Lima*, **B. Sinaimeri***, G. Sacomoto, H. Lopez-Maestre, C. Marchet, V. Miele, M.-F. Sagot, V. Lacroix: Playing hide and seek with repeats in local and global de novo transcriptome assembly of short RNA-seq reads. **Algorithms for Molecular Biology** 12(1): 2:1-2:19, 2017.
21. T. Calamoneri, B. Sinaimeri, Pairwise Compatibility Graphs: A Survey. **SIAM Review** 58(3): 445–460, 2016.
22. C. Baudet*, B.Donati*, **B. Sinaimeri***, P. Crescenzi, C. Gautier, C. Matias and M-F. Sagot, Co-phylogeny Reconstruction via an Approximate Bayesian Computation, **Systematic Biology** 64 (3), 416–431, 2015.
23. B. Donati, C. Baudet, **B. Sinaimeri**, P. Crescenzi and M-F. Sagot, EUCALYPT: Efficient tree reconciliation enumerator, **Algorithms for Molecular Biology** 10(3), 2015.
24. T. Calamoneri, A. Frangioni and B. Sinaimeri, Pairwise Compatibility Graphs of Caterpillars, *The Computer Journal* 57(11), 1616–1623, 2014.
25. T. Calamoneri, R. Petreschi and B. Sinaimeri, Pairwise compatibility property of some superclasses of threshold graphs, **Discrete Mathematics, Algorithms and Applications** (DMAA), 5(2), 2013.
26. T. Calamoneri, E. Montefusco, R. Petreschi and B. Sinaimeri, Exploring Pairwise Compatibility graphs, **Theoretical Computer Science** 468: 23–36, 2013.
27. T. Calamoneri and B. Sinaimeri, L(2,1)-labeling of oriented planar graphs, **Discrete Applied Mathematics** 161(12): 1719–1725, 2013.
28. T. Calamoneri, D. Frascaria and B. Sinaimeri, All graphs with at most seven vertices are Pairwise Compatibility Graphs, **The Computer Journal** 56(7): 882–886, 2013.
29. A. Monti and B. Sinaimeri, Rainbow Graph Splitting, **Theoretical Computer Science** 412(39): 5315-5324, 2011.
30. Z. Füredi, I. Kantor, A. Monti and B. Sinaimeri, On Reverse-Free Codes and Permutations, **SIAM Journal on Discrete Mathematics** 24(3): 964–978, 2010.
31. J. Körner, G. Simonyi and B. Sinaimeri, On types of growth for graph-different permutations, **Journal of Combinatorial Theory Series A** 116: 713–723, 2009.
32. J. Körner and B. Sinaimeri, On cancellative set families, **Combinatorics, Probability and Computing**, 16(4): 767–773, 2007.

II. **Refereed International Conference**

- A. Monti and B. Sinaimeri. Disjoint Covering of Bipartite Graphs with s-clubs. In: Kralovic, R., Kurkova, V. (eds) SOFSEM 2025: Theory and Practice of Computer Science. **SOFSEM 2025**. Lecture Notes in Computer Science, vol 15539. Springer, Cham.
- On star-multi-interval pairwise compatibility graphs A Monti, B Sinaimeri, In: Lin, CC., Lin, B.M.T., Liotta, G. (eds) WALCOM: Algorithms and Computation **WALCOM 2023**, Lecture Notes in Computer Science, vol 13973. Springer, Cham.
- Y. Wang, A. Mary, M.-F Sagot and B. Sinaimeri. A General Framework for Enumerating Equivalence Classes of Solutions, 29th European Symposium on Algorithms, **ESA 2021**, Lisbone, Portugal, 2021.
- G. Italiano, N. Prezza, B. Sinaimeri and R. Venturini. Compressed Weighted de Bruijn Graphs, 32nd Annual Symposium on Combinatorial Pattern Matching, **CPM 2021**, 2021.

- Y. Wang, A. Mary, M.-F Sagot and B. Sinaimeri. Making Sense of a Cophylogeny Output: Efficient Listing of Representative Reconciliations, 21st International Workshop on Algorithms in Bioinformatics, **WABI 2021**, 2021.
- V. Acuña, R. Grossi, G. Italiano, L. De Lima, L. Pepé Sciarria, M.-F. Sagot and B. Sinaimeri. A family of tree-based generators for bubbles in directed graphs, 31rd International Workshop on Combinatorial Algorithms, **IWOCA 2020** , Bordeaux, France, June 8-10, 2020.
- V. Acuña, R. Grossi, G. Italiano, L. De Lima, R. Rizzi, G. Sacomoto, M.-F. Sagot and B. Sinaimeri. On Bubble Generators in Directed Graphs, 43rd International Workshop on Graph-Theoretic Concepts in Computer Science, **WG 2017**, Eindhoven, The Netherlands, June 21-23, 2017.
- T. Calamoneri, M. Gastaldello, A. Mary, M.-F. Sago, B. Sinaimeri, On Maximal Chain Subgraphs and Covers of Bipartite Graphs, 27th International Workshop on Combinatorial Algorithms **IWOCA 2016** , Helsinki, Finland, August 17–19, 2016.
- L. Urbini, **B. Sinaimeri**, C. Matias and M.-F. Sagot, Robustness of the Parsimonious Reconciliation Method in Cophylogeny, Algorithms for Computational Biology, Third International Conference, **AlCoB 2016**, 119–130.
- T. Calamoneri, M. Gastaldello, A. Mary, M.-F. Sago, B. Sinaimeri: On Maximal Chain Subgraphs and Covers of Bipartite Graphs. **ICTCS 2016**, 286–291, 2016.
- L. Bulteau, G. Sacomoto and B. Sinaimeri, Computing an Evolutionary Ordering is Hard, **LAGOS 2015**, VIII Latin-American Algorithms, Graphs and Optimization Symposium, Brazil 2015.
- G. Sacomoto, **B. Sinaimeri**, C. Marchet, V. Miele, M-F. Sagot and V. Lacroix, Navigating in a sea of repeats in RNA-seq without drowning, **WABI 2014**, 14th Workshop on Algorithms in Bioinformatics, LNCS vol.8701 ,82–96, Wroclaw, Poland 2014.
- Tiziana Calamoneri, Blerina Sinaimeri: Relating threshold tolerance graphs to other graph classes,**ICTCS 2014**, 16th Italian Conference on Theoretical Computer Science, Perugia, Italy 73-79, 2014.
- T. Calamoneri, R. Petreschi and B. Sinaimeri, On relaxing the constraints in Pairwise Compatibility graphs, **WALCOM 2012**, In: Md. S. Rahman and S.-i. Nakano (Eds.), LNCS vol. 7157,124–135, Springer, Berlin, 2012.
- Z. Füredi, I. Kantor, A. Monti and B. Sinaimeri, On Reverse-Free Codes and Permutations, **EuroComb 2011**, Electronic Notes in Discrete Mathematics vol. 38, 383–387, Budapest, 2011.

Supervision of Ph.D. students

current Cosimo Poccianti, Ph.D. in Cybersecurity.

current Gabriele di Palma, national Ph.D. in Artificial Intelligence, (co-superviser). This supervision is in collaboration with G. F. Italiano.

current Riccardo Sabbadini, national Ph.D. in Artificial Intelligence, (co-superviser). This supervision is in collaboration with G. F. Italiano.

2025 Davide Torre, national Ph.D. in Artificial Intelligence, (co-superviser). This supervision is in collaboration with G. F. Italiano.

2021 Yishu Wang, Ph.D. Thesis title “Algorithmic investigation of the dynamics of species interactions”, (co-superviser), University Lyon I, Lyon. This supervision was in collaboration with M.-F. Sagot (Directeur de recherche - INRIA, ERABLE) and Mario Figueiredo (Full professor at IST, Lisbon, Portugal).

2017 Laura Urbini, Ph.D. in Bioinformatics, Thesis title “Models and algorithms for the study of symbiotic interactions”, (co-adviser), University Lyon I and University Paris Diderot. This supervision is in collaboration with M.-F. Sagot (Directeur de recherche - INRIA, ERABLE) and C. Matias (Directeur de recherche - CNRS, ERABLE).