

MARCO CORNELI

Junior professor at UniCA

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ACADEMIC CAREER

Chair of Junior Professor (CPJ) in AI for Archaeology and History

Université Côte d'Azur, INRIA, CNRS, Lab. J.A.Dieudonné, Maasai team, Nice, France

Sept. 2022 – to date

Nice, FR

Research Engineer

Center of Modeling, Simulation and Interactions, IDEX, UniCA

Sept. 2019 – Aug. 2022

Nice, FR

Post-doctoral researcher

Université Côte d'Azur

Oct. 2017 – Aug. 2019

Nice, FR

PhD in Applied Mathematics

Université Paris 1 Panthéon-Sorbonne

Apr. 2014 – Sep. 2017

Paris, FR

ONGOING PROJECTS

CPJ in AI for H/A

CNRS/INEE

2023 – 2027

- AI for archaeo-zoology: learning methods to identify and cluster faunal remains (PhD, D. Adamo)
- Teaching interdisciplinary subjects

AIWOOD

ANR

2023 – 2027

- Wood/charcoal taxonomic identification from microscopic images by means of neuro-symbolic artificial intelligence (porteur: I. Théry)

ORGANISATION

- 1st international conference on artificial Intelligence and applied Mathematics for History and Archaeology (IAMAHA, 2023)
- Conference/Winter-school StatLearn (2017 – 2023)
- LJAD seminar series (Statistics and Probability team, co-organiser, 2017 – 2019)
- PhD students seminar series at SAMM (2014 – 2017)

PHD STUDENTS



Davide Adamo

INRIA UniCA, 1st year, co-supervisor



Seydina Ousmane Niang

INRIA UniCA, 1st year, advisor

ALUMNI



Giulia Marchello

former PhD student, now post-doc at INRIA, Montpellier



Cédric Vincent-Cuaz

former PhD student, now post-doc at EPFL, Lausanne



Dingge Liang

former PhD student, now post-doc at Zhangjiang Institute of Mathematics, Shanghai

MORE ACADEMIC DUTIES

Associate researcher at MAASAI team
INRIA, UniCA

Reviewer for Statistics and ML journals
ADAC, CSDA, SIIMS, JAS, DKE

EDUCATION

Ph.D. in Applied Mathematics

Université Paris 1 Panthéon-Sorbonne

Sept. 2014 – Sept. 2017

Thesis title: *Dynamic stochastic block models, clustering and segmentation in dynamic graphs*

M.Sc. in Modélisation Aléatoire M2MO (ex DEA Laure Elie)

Université Paris 7 - Denis Diderot

Sept. 2013 – June 2014

M.Sc. in Finance

University of Siena (Italy)

Sept. 2009 – Dec. 2012

B.Sc. in Economy

University of Siena (Italy)

Sept. 2006 – June 2009

PUBLICATIONS

Journal Articles

- [1] **M. Corneli**, E. Erosheva, X. Qian, M. Lorenzi, and for the Alzheimer's Disease Neuroimaging Initiative, "A bayesian approach for clustering and exact finite-sample model selection in longitudinal data mixtures," *Computational Statistics*, 2024.
- [2] D. Liang, **M. Corneli**, C. Bouveyron, and P. Latouche, "Clustering by deep latent position model with graph convolutional network," *Advances in Data Analysis and Classification*, 2024. DOI: 10.1007/s11634-024-00583-9.
- [3] G. Marchello, **M. Corneli**, and C. Bouveyron, "A deep dynamic latent block model for co-clustering of zero-inflated data matrices," *Journal of Computational and Graphical Statistics*, vol. 0, no. ja, pp. 1–39, 2024. DOI: 10.1080/10618600.2024.2319162.
- [4] D. Liang, **M. Corneli**, C. Bouveyron, and P. Latouche, "The graph embedded topic model," *Neurocomputing*, vol. 562, p. 126 900, 2023, ISSN: 0925-2312. DOI: <https://doi.org/10.1016/j.neucom.2023.126900>.
- [5] R. Rastelli and **M. Corneli**, "Continuous latent position models for instantaneous interactions," *Network Science*, vol. 11, no. 4, pp. 560–588, 2023. DOI: 10.1017/nws.2023.14.
- [6] R. Romero, J. Lijffijt, R. Rastelli, **M. Corneli**, and T. De Bie, "Gaussian embedding of temporal networks," *IEEE Access*, vol. 11, pp. 117 971–117 983, 2023. DOI: 10.1109/ACCESS.2023.3324213.
- [7] L. Vanni, **M. Corneli**, D. Mayaffre, and F. Precioso, "From text saliency to linguistic objects: Learning linguistic interpretable markers with a multi-channels convolutional architecture," *Corpus*, no. 24, 2023.
- [8] G. Marchello, A. Fresse, **M. Corneli**, and C. Bouveyron, "Co-clustering of evolving count matrices with the dynamic latent block model: Application to pharmacovigilance," *Statistics and Computing*, vol. 32, no. 3, p. 41, 2022. DOI: 10.1007/s11222-022-10098-y.
- [9] D. Liang, **M. Corneli**, C. Bouveyron, and P. Latouche, "Deepltrs: A deep latent recommender system based on user ratings and reviews," *Pattern Recognition Letters*, vol. 152, pp. 267–274, 2021, ISSN: 0167-8655. DOI: <https://doi.org/10.1016/j.patrec.2021.10.022>.
- [10] **M. Corneli**, C. Bouveyron, and P. Latouche, "Co-clustering of ordinal data via latent continuous random variables and not missing at random entries," *Journal of Computational and Graphical Statistics*, vol. 29, no. 4, pp. 771–785, 2020. DOI: 10.1080/10618600.2020.1739533.
- [11] L. R. Bergé, C. Bouveyron, **M. Corneli**, and P. Latouche, "The latent topic block model for the co-clustering of textual interaction data," *Computational Statistics & Data Analysis*, vol. 137, pp. 247–270, 2019, ISSN: 0167-9473. DOI: <https://doi.org/10.1016/j.csda.2019.03.005>.
- [12] **M. Corneli**, C. Bouveyron, P. Latouche, and F. Rossi, "The dynamic stochastic topic block model for dynamic networks with textual edges," *Statistics and Computing*, vol. 29, no. 4, pp. 677–695, 2019. DOI: 10.1007/s11222-018-9832-4.
- [13] **M. Corneli**, P. Latouche, and F. Rossi, "Multiple change points detection and clustering in dynamic networks," *Statistics and Computing*, vol. 28, no. 5, pp. 989–1007, 2018. DOI: 10.1007/s11222-017-9775-1.
- [14] **M. Corneli**, P. Latouche, and F. Rossi, "Block modelling in dynamic networks with non-homogeneous poisson processes and exact icl," *Social Network Analysis and Mining*, vol. 6, no. 1, p. 55, 2016. DOI: 10.1007/s13278-016-0368-3.
- [15] **M. Corneli**, P. Latouche, and F. Rossi, "Exact icl maximization in a non-stationary temporal extension of the stochastic block model for dynamic networks," *Neurocomputing*, vol. 192, pp. 81–91, 2016, Advances in artificial neural networks, machine learning and computational intelligence, ISSN: 0925-2312. DOI: <https://doi.org/10.1016/j.neucom.2016.02.031>.

Proceedings (main AI conferences)

- [16] G. Marchello, **M. Corneli**, and C. Bouveyron, "A deep dynamic latent block model for the co-clustering of zero-inflated data matrices," in *ECML-PKDD 2023-European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases*, 2023.
- [17] G. Marchello, **M. Corneli**, and C. Bouveyron, "Deep dynamic co-clustering of streams of count data: A new online zip-dlbn," in *31st European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning*, 2023.
- [18] C. Vincent-Cuaz, R. Flamary, **M. Corneli**, T. Vayer, and N. Courty, "Semi-relaxed gromov-wasserstein divergence and applications on graphs," in *International Conference on Learning Representations*, 2022.

- [19] C. Vincent-Cuaz, R. Flamary, **M. Corneli**, T. Vayer, and N. Courty, "Template based graph neural network with optimal transport distances," in *Advances in Neural Information Processing Systems*, vol. 35, 2022, pp. 11 800–11 814.
 - [20] C. Vincent-Cuaz, T. Vayer, R. Flamary, **M. Corneli**, and N. Courty, "Online graph dictionary learning," in *Proceedings of the 38th International Conference on Machine Learning*, M. Meila and T. Zhang, Eds., ser. Proceedings of Machine Learning Research, vol. 139, PMLR, 18–24 Jul 2021, pp. 10 564–10 574.
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Book Chapters

- [21] L. Vanni, **M. Corneli**, D. Longrée, D. Mayaffre, and F. Precioso, "Key passages : From statistics to deep learning," in *Text Analytics*, D. F. Iezzi, D. Mayaffre, and M. Misuraca, Eds. Cham: Springer International Publishing, 2020, pp. 41–53, ISBN: 978-3-030-52680-1.