

UNIVERSITÀ DEGLI STUDI DI MILANO

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Mauricio Abel Soto Gomez
CURRICULUM VITAE**Personal Information**

Nome	Mauricio Abel
Cognome	Soto Gomez
Data di Nascita	12/04/1980

Qualifications

02/12/2011	Ph.D. in Computer Science. Institute of Fundamental Research in Informatics - IRIF(ex LIAFA), Université Paris Diderot. <i>"On topological properties of graphs and application to communication networks"</i> . Advisors : Laurent Viennot and Fabien de Montgolfier Jury: Michel Habib, Jean-Loup Guillaume, Nicolas Hanusse, Sébastien Tixeuil.
03/03/2008	M.S. in Computer Science , Parisian Master of Research in Computer Science LIAFA, Université Paris Diderot. <i>"Protocols and algorithms on communication networks"</i> . Advisor : Adi Rosén
16/19/2005	Mathematical Engineering Department of Mathematical Engineering, Universidad de Chile. <i>"Adversarial queueing theory with setups"</i> . Advisor : Marcos Kiwi

Professional Experience

01/02/2023-	RTDa - Università degli Studi di Milano. Department of Computer Science "Giovanni degli Antoni".
13/01/2020-31/01/2023	RTDa - Politecnico di Milano. Department of Management , Economics and Industrial Engineering.
01/06/2019-12/01/2020	Assegno Ricerca - Università degli Studi di Milano-Bicocca. Department of Informatics, Systems and Communication. "On semantic embedding techniques for tabular data reconciliation".
01/03/2018-28/02/2019	Assegno Ricerca - Università degli Studi di Milano-Bicocca. Department of Informatics, Systems and Communication. "Algorithms and tools for linked data profiling".
01/03/2017-28/02/2018	Assegno Ricerca - Università degli Studi di Milano-Bicocca. Department of Informatics, Systems and Communication. "Quality profiles of open data on the Lombardy region".
01/03/2017-30/04/2017	Occasional collaboration - Università degli Studi di Milano-Bicocca. Department of Informatics, Systems and Communication. "Phylogenetic reconstruction for tumoral evolution".

2013 – 2015	Research project manager - Universidad de Chile . Department of Mathematical Engineering. “Graph topological properties and application to communication networks”.
2011 / 2012	Teaching Assistant (Attaché Temporaire d’Enseignement et de Recherche) – full time Université d’Orléans . Graphs, Algorithms and Models of Computation, LIFO.
2010 / 2011	Teaching Assistant – partial time. Université Paris Diderot . LIAFA.
2006 / 2007	Université Paris Sud . Laboratoire de Recherche en Informatique Master research internship. Advisor : Adi Rosén
2005 / 2006	Ripley . Retail. Product Manager - Marketing Department.
2004 / 2005	Universidad de Chile . CMM – UMI CNRS 2807, Santiago, Chile. Research internship. Advisor : Marcos Kiwi
2003 / 2004	Universidad de Chile . CMM , Mathematical Mechanics Project Research internship. Advisor : Raúl Gormaz “Solid collision models and numerical simulation in the mine ‘El Teniente’ ”.

Teaching Experience

Università degli Studi di Milano – Professor	
Health Informatics (L3 Medicine)	: Spring 2023.
Machine Learning (M1 Human Science)	: Fall 2023.
Politecnico Milano – Teaching Assistant	
Machine Learning (M1 Management)	: Fall 2022, Fall 2021, Fall 2020, Fall 2019.
Università degli Studi di Milano-Bicocca – Professor	
Optimization (L3 Info)	: Fall 2019.
Università degli Studi di Milano-Bicocca – Teaching Assistant	
Optimization (L3 Info)	: Fall 2017, Fall 2018.
Decision models (M1 Info)	: Spring 2018.
Universidad de Chile – Professor	
Multivariate calculus (L2 Maths)	: Spring 2015, Fall 2015.
Advanced calculus (L2 Maths)	: Spring 2015, Fall 2015.
Optimization (L2 Maths)	: Spring 2015, Summer 2014, Spring 2014, Fall 2014.
Université d’Orléans – Professor	
Functional programming (L2 Maths-CS)	: Spring 2012.
Mathematics for Computer Science (L2 Maths-CS)	: Spring 2012.
Université d’Orléans – Teaching assistant	
Informatics tools (L1)	: Fall 2011.
Introduction to programming (L1 Math-CS)	: Fall 2011.
Linear Programming (L3 Math-CS)	: Fall 2011.
Université Paris Diderot – Teaching assistant	
Introduction to Java programming (L3 Math-CS)	: Spring 2011.
HTML/CSS, PHP/SQL (L3 Math-CS)	: Spring 2011.
Algorithmic (L3 Bio-CS)	: Fall 2011.
Universidad de Chile – Teaching assistant	
Algebra (L1 Math)	: Spring 2002.
Calculus (L1 Math)	: Fall 2004.
Advanced calculus (L2 Math)	: Spring 2003, Spring 2002.
Multivariate calculus (L2 Math)	: Fall 2004.
Probability (L3 Math)	: Spring 2004, Summer 2003, Fall 2003.
Statistics (L3 Math)	: Summer 2003, Spring 2003.

Thesis Supervision

PhD. Thesis Supervisor

- Ali Pashaeibarough. *Anacleto Lab*. Università degli Studi di Milano. 2023.

Master Thesis Supervisor

- Ping An Steven. *Predictive model for small capacity restaurants' demand based on the CRISP-DM methodology*. Politecnico di Milano. 2020.

BCs. Academic Tutor - Politecnico di Milano

1. Ferrari Elisa (2021/2022). *Il processo consulenziale degli Enti del Terzo Settore: analisi, valutazione e sviluppo*.
2. Maggioni Jacopo (2021/2022). *Sviluppo di Indicatori di Performance per un Home Care Provider - Il Caso Vivisol*.
3. Maniscalchi Andrea (2021/2022). *Introduzione di un approccio matematico per la gestione dell'Earned Value in STMicroelectronics*.
4. Malerba Mariapia (2021/2022). *Le comunità energetiche: opportunità concrete per una piccola utility locale*.
5. Grosa Giacomo (2020/2021). *La gestione del magazzino e l'implementazione di un sistema WMS: l'esperienza in Bormioli Pharma*.
6. Balzardi Paolo (2020/2021). *VMI in Barilla: benefici, criticità e futuri sviluppi*.
7. Gervasoni Carolina (2020/2021). *Building Management System: elaborazione di un nuovo catalogo in BTicino*.
8. Carenini Alessandro James (2020/2021). *Analisi della gestione delle scorte di sicurezza*.
9. Balzardi Paolo (2020/2021). *VMI in Barilla: benefici, criticità e futuri sviluppi*.
10. Arcaro Sofia (2020/2021). *H-Vision ed Efficientamento Energetico per CNH Industrial- HITACHI*.

Projects, Fundings

06/2013-05/2015

Research Project Head. *Topology and Dynamics in communication networks: theory and applications*. Scientific project founding grant (50K euros). Founded by CONICYT.

Activity as Reviewer

Journal: Theoretical Computer Science, Discrete Applied Mathematics, Computers & Operations Research, Central European Journal of Mathematics, Data Mining and Knowledge Discovery.

Conference/Workshop: LATIN 2022: Latin American Symposium on Theoretical Informatics, IWOCA 2019: International Workshop on Combinatorial Algorithms, WWW 2019: The Web Conference, WABI 2018: Workshop on Algorithms in Bioinformatics, ICTCS 2023: 24th Italian Conference on Theoretical Computer Science.

Organization

1. **Program committee member.** iiWAS 2023: 25th International Conference on Information Integration and Web Intelligence.
2. **Organizing Committee member.** Summer School on Discrete Mathematics 2014,2015. Valparaíso. Chile

Publications

Journal Papers

1. Simone Ciccolella, Gianluca Della Vedova, Vladimir Filipović, Mauricio Soto Gomez. **Three Metaheuristic Approaches for Tumor Phylogeny Inference: An Experimental Comparison**. *Algorithms*, 2023. DOI: 10.3390/a16070333
2. Keith Araño, Carlotta Orsenigo, Mauricio Soto, and Carlo Vercellis. **Multimodal sentiment and emotion recognition in hyperbolic space** *Expert Systems with Applications*, 2021. DOI 10.1016/j.eswa.2021.115507
3. Simone Ciccolella, Camir, Ricketts, Mauricio Soto Gomez, Murray Patterson, Danae, Silverbush, Paola Bonizzoni, Iman Hajirasouliha, Gianluca Della Vedova. **Inferring cancer progression from Single-Cell Sequencing while allowing mutation losses** *Bioinformatics*, 2021. DOI 10.1093/bioinformatics/btaa722
4. Simone Ciccolella, Mauricio Soto Gomez, Murray Patterson, Gianluca Della Vedova, Iman Hajirasouliha, Paola Bonizzoni. **gpps: an ILP-based approach for inferring cancer progression with mutation losses from single cell data**. *BMC Bioinformatics*, 2020. DOI 10.1186/s12859-020-03736-7
5. Paola Bonizzoni, Simone Ciccolella, Gianluca Della Vedova, Mauricio Soto Gomez. **Does Relaxing the Infinite Sites Assumption Give Better Tumor Phylogenies? An ILP-Based Comparative Approach**. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2019. DOI 10.1109/TCBB.2018.2865729
6. David Coudert, Guillaume Ducoffe, Nicolas Nisse and M.S. **On distance-preserving elimination orderings in graphs: complexity and algorithms**. *Discrete Applied Mathematics*, 2018. DOI 10.1016/j.dam.2018.02.007
7. M.S. and Christopher Thraves. **(p) -Box(1): A new graph model**. *Discrete Mathematics and Theoretical Computer Science*, 2015. ISSN 14627264
8. Eduardo G. Pardo, M.S. and Christopher Thraves. **Embedding signed graphs in the line**. *Journal of Combinatorial Optimization*, 2015. DOI 10.1007/s10878-013-9604-1
9. Marcos Kiwi, M.S. and Christopher Thraves. **Adversarial queueing theory with setups**. *Theoretical Computer Science*, 2009. DOI 10.1016/j.tcs.2008.09.064

Conference Papers

10. Emanuele Cavalleri, Sara Bonfitto, Alberto Cabri, Jessica Gliozzo, Paolo Perlasca, Mauricio Soto Gomez, Gabriella Trucco, Elena Casiraghi, Giorgio Valentini, Marco Mesiti. **A Meta-Graph for the Construction of an RNA-Centered Knowledge Graph**. *Bioinformatics and Biomedical Engineering*, 2023. DOI: 10.1007/978-3-031-34953-9_13
11. Paola Bonizzoni, Gianluca Della Vedova, Simone Ciccolella, and M.S. **Beyond Perfect Phylogeny: Multisample Phylogeny Reconstruction via ILP**. In: *Proceedings of the 8th ACM Conference on Bioinformatics, Computational Biology and Health Informatics (AMC-BCB '17)*, Boston, MA, August 2017. DOI 10.1145/3107411.3107441
12. Gianluca Della Vedova, Murray Patterson, Raffaella Rizzi and M.S. **Character-Based Phylogeny Construction and Its Application to Tumor Evolution**. In: *Proceedings of 13th Conference on Computability in Europe (CiE 2017)*, Turku, Finland, June, 2017. DOI 10.1007/978-3-319-58741-7_1
13. Manuel Vimercati, Federico Bianchi, M.S. and Matteo Palmonari. **Mapping Lexical Knowledge to Distributed Representations for Ontology Concept Invention**. *8th International Conference of the Italian Association for Artificial Intelligence (AIIA 2019)*, Rende, Italy, November 2019. DOI 10.1007/978-3-030-35166-3_40
14. Federico Bianchi, M.S., Matteo Palmonari and Vincenzo Cutrona. **Type Vector Representations from Text: An Empirical Analysis**. In: *Proceedings of the Workshop on Deep Learning for Knowledge Graphs and Semantic Technologies. 2018. (DL4KGS18)*, Crete, Greece, June 2018. ISSN 16130073
15. Laurent Viennot, M.S. and Fabien de Montgolfier. **Asymptotic Modularity of Some Graph Classes**. In: *Proceedings of 22nd International Symposium on Algorithms and Computation (ISAAC 2011)*, Yokohama Japan, December 2011. DOI 10.1007/978-3-642-25591-5_45

16. Laurent Viennot, M.S. and Fabien de Montgolfier. **Treewidth and Hyperbolicity of the Internet.** *In: Proceedings of 10th IEEE International Symposium on Network Computing and Applications (NCA 2011)*, Cambridge, MA, USA, August 2011. DOI 10.1109/NCA.2011.11
17. Laurent Viennot, M.S. and Fabien de Montgolfier. **Modularité asymptotique de quelques classes de graphes.** *In: Actes du 14èmes Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications (AlgoTel 2012)*, La Grande Motte, Hérault, France, May 2012.
18. Laurent Viennot, M.S. and Fabien de Montgolfier. **Clustering de métrique et clustering de graphe.** *In: Actes du 13es Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications (AlgoTel 2011)*, Cap Estérel, France, May 2011.
19. Laurent Viennot, M.S. and Fabien de Montgolfier. **Autour du caractère arborescent d'Internet.** *In: Actes du Majestic 2010*, Bordeaux, France, October 2010.
20. Andrea Maurino, Anisa Rula, Bjørn Marius von Zernichow, M.S., Brian Elvesæter, Dumitru Roman: **Modelling and Linking Company Data in the euBusinessGraph Platform.** *In: Proceedings of the 5th Workshop on Data Science for Macro-modeling with Financial and Economic Datasets (DSMM@SIGMOD 2019)*, Amsterdam, Netherlands, July 2019.
Preprint
21. Andrea Mor, Carlotta Orsenigo, Mauricio Soto Gomez, and Carlo Vercellis. **Shaping the causes of product returns: a topic modeling approach on online customer reviews.** Electronic Commerce Research. (submitted)
22. Paola Bonizzoni, Gianluca Della Vedova, Mauricio Soto Gomez, Gabriella Trucco. **Computing the Dollo-1 Phylogeny for Skeleton Graphs in Polynomial Time.** (draft)

Skills

Languages	Spanish (mother tongue), English (fluent), French (fluent) Italian (fluent).
Programming	PYTHON, R, MATLAB, JAVA, OCAML, PHP/SQL, HTML/CSS, UNIX shell scripting.

Awards & Fellowships

Feb 2013	Qualification aux fonctions de maître de conférences Section 27 (Computer Science). France.
Sept 2006 – Aug 2009	Fellowship Master research and Doctorate Embassy of France – CONICYT (university, social security and monthly expenses).
Sept 2006 – Aug 2009	Fellowship Master research and Doctorate Embassy of France – CONICYT (university, social security and monthly expenses).
1998, '99, '00	Faculty excellent academic student (top 5% of Faculty of Physics and Mathematics, Universidad de Chile).
1998	Academic excellence grant (Admission position 6/542, Faculty of Physics and Mathematics, Universidad de Chile).