PERSONAL INFORMATION

GIOVANNI MICALE

Via del Santuario n. 30, 95028, Valverde, Catania (CT), Italy

+39 095 7412416

+39 348 9287690

gmicale@dmi.unict.it

https://alpha.dmi.unict.it/~gmicale

Skype gmicale87

Sex Male | Birthday 06/06/1987 | Nationality Italian

OCCUPATION PROFESSIONAL SECTOR

Design and development of algorithms for data analysis, in particular graph mining, with applications to bioinformatics e social networks.

PROFESSIONAL EXPERIENCE

02/08/2020 – Present

Research fellowship

Department of Clinical and Experimental Medicine – University of Catania – P.zza dell'Università, 2 - Catania

- Qualifica: Research fellow

Intervento Linea 1 (Mobilita dei ricercatori) di cui al D.D. 407 del 27.2.2018 "AIM - Attrazione e Mobilita Internazionale", emanato dal MIUR in attuazione dell'Azione 1.2 "Mobilita dei Ricercatori" dell'Asse I del PON R&I 2014-2020. Settore concorsuale 01/B1 Informatica, settore scientifico disciplinare INF/01 (CUP:E63118000070007 — AIM1877838 — attivita 1) Area: SALUTE), bandita con D.R. 695 dell'11.3.2019.

01/02/2019 – 01/02/2020

Research fellowship

Department of Clinical and Experimental Medicine – Università Of Catania – P.zza dell'Università, 2 - Catania

- Qualification: Research fellow

Research project: "MetaClin: a metagenomics pipeline for the analysis of hospital environments" (Bando n. 2506 (D.R. del 27/06/2018).
Advisor: Prof. Alfredo Ferro

06/05/2015 – 06/05/2017

Research fellowship

Department of Maths and Computer Science – University of Catania – P.zza dell'Università, 2 – Catania, Italy

- Qualification: Research fellow

Research project: "Algoritmi stocastici per l'analisi automatica di reti sociali ed informative" (Bando n. 993 (D.R. del 26/03/2015).
Advisor: Prof. Alfredo Pulvirenti

01/01/2012 – 31/12/2014

PhD in Computer Science

Department of Computer Science – University of Pisa – Largo Bruno Pontecorvo, 3 – Pisa, Italy

- Qualification: PhD student

Advisor: Prof. Paolo Ferragina

INSTRUCTION AND FORMATION

23/06/2015

PhD in Computer Science (XXVII Cycle)

Department of Computer Science – University of Pisa – Largo Bruno Pontecorvo, 3 – Pisa, Italy

Title of the thesis: “A Gibbs sampling strategy for mining protein-protein interaction networks and protein structures”.

21/07/2011

Master degree in Computer Science

Department of Maths and Computer Science – University of Catania – P.zza dell’Università, 2 – Catania, Italy

Title of the thesis: “LGA Gibbs Sampler, un algoritmo per l’allineamento locale di reti”.
Passing grade: 110 cum laude.

23/07/2009

Bachelor degree in Computer Science

Department of Maths and Computer Science – University of Catania – P.zza dell’Università, 2 – Catania, Italy

Title of the thesis: “Il problema LCS e le sue applicazioni”.
Passing grade: 110 cum laude.

PERSONAL COMPETENCES

Native language: Italian

Other languages

	COMPREHENSION		SPEAKING		WRITING
	Listening	Reading	Interaction	Oral production	
English	B2	B2	B2	B2	B2
	FIRST Certification attained on 18/08/2011				

Capacities and social competences: Good ability to work in groups, matured in situations where the collaboration between people with different working competences was necessary.

Organizational and management competences: Good ability to work in stress situations and positive attitude to project and group management.

Digital competences

SELF EVALUATION				
Information elaboration	Communication	Content creation	Security	Problem resolution
Expert user	Expert user	Expert user	Expert user	Expert user

Other abilities in Computer Science:

- Advanced knowledge of programming languages Java and R and the development environment RStudio;
- Basic knowledge of programming languages Python, PHP, HTML, SQL and MATLAB and Microsoft Office Suite;
- Basic knowledge of administration of operating systems Linux and Windows.

Other competences: On 18/08/2011 passed FIRST exam for Certification of knowledge of English language. Passing grade: B.

Driving licence Licence B.

OTHER INFORMATION

Awards

- Archimede Award 2010 received by Department of Maths and Computer Science of University of Catania for the best Bachelor Degree thesis in Computer Science in the academic years 2009-2010.
- Archimede Award 2012 received by Department of Maths and Computer Science of University of Catania for the best Master Degree thesis in Computer Science in the academic years 2011-2012.

Visiting periods abroad

- 04/06/2012 - 22/06/2012 at the Courant Institute of Mathematical Sciences, New York University, New York (US) under the supervision of Prof. Bud Mishra.
- 21/05/2013 - 21/06/2013 at the Courant Institute of Mathematical Sciences, New York University, New York (US) under the supervision of Prof. Dennis Shasha.
- 15/08/2017 - 31/08/2017at the Courant Institute of Mathematical Sciences, New York University, New York (US) under the supervision of Prof. Dennis Shasha.
- Dal 11/09/2018 al 11/10/2018 at the Courant Institute of Mathematical Sciences, New York University, New York (US) under the supervision of prof. Dennis Shasha.
- Dal 17/09/2019 al 03/10/2019 presso il Courant Institute of Mathematical Sciences, New York University, New York (USA) con il prof. Dennis Shasha.

Journal publications

- Massimino M, Stella S, **MICALE G**, Motta L, Pavone G, Broggi G, Piombino E, Magro G, Soto Parra HJ, Manzella L, Vigneri P. “Mechanistic translation of melanoma genetic landscape in enriched pathways and oncogenic protein-protein interactions”. CANCER GENOMICS & PROTEOMICS, 19(3) pp. 350-361, doi:10.21873/cgp.20325
- Tirrò E, Martorana F, **MICALE G**, Inzerilli N, Carciotto R, Romano C, Longhitano C, Motta G, Lanzafame K, Stella S, Massimino M, Vitale SR, Salvatorelli L, Magro G, Manzella L, Vigneri P (2022). “Next generation sequencing in a cohort of patients with rare sarcoma histotypes: a single institution experience”. PATHOLOGY – RESEARCH AND PRACTICE, 232 pp. 153820, doi:10.1016/j.prp.2022.153820
- Grasso R, **MICALE G**, Ferro A, Pulvirenti A (2022). “MODIT: MOtif DIscovery in Temporal Networks”. FRONTIERS IN BIG DATA, 4, doi:10.3389/fdata.2021.806014
- **MICALE G**, Locicero G, Pulvirenti A, Ferro A (2021). “TemporalRI: subgraph isomorphism in temporal networks with multiple contacts”. APPLIED NETWORK SCIENCE, 6(55), doi:10.1007/s41109-021-00397-0.
- Martorana E, **MICALE G**, Ferro A, Pulvirenti A (2020). “Establish the expected number of induced motifs on unlabeled graphs through analytical models”. APPLIED NETWORK SCIENCE, 5(58), doi:10.1007/s41109-020-00294-y.
- **MICALE G**, Pulvirenti A, Ferro A, Giugno R, Shasha D (2019). “Fast methods for finding significant motifs on labelled multi-relational networks”. JOURNAL OF COMPLEX NETWORKS, doi:10.1093/comnet/cnz008.
- Aparo A, Bonnici V, **MICALE G**, Ferro A, Shasha D, Pulvirenti A, Giugno R (2019). “Fast subgraph matching strategies based on pattern-only heuristics”. INTERDISCIPLINARY SCIENCES COMPUTATIONAL LIFE SCIENCES, vol. 11 (1), pp. 21-32, doi:10.1007/s12539-019-00323-0.

- Sardina DS, **MICALE G**, Ferro A, Pulvirenti A, Giugno R (2018). “INBIA: a boosting methodology for proteomic network inference”. BMC BIOINFORMATICS, vol. 19 (7), pp.188, doi:10.1186/s12859-018-2183-5.
- **MICALE G**, Giugno R, Ferro A, Mongiovì M, Shasha D, Pulvirenti P (2017). “Fast analytical methods for finding significant labeled graph motifs”. DATA MINING AND KNOWLEDGE DISCOVERY, p. 1-28, doi:10.1007/s10618-017-0544-8.
- Bonnici V, Busato F, **MICALE G**, Bombieri N, Pulvirenti A, Giugno R (2016). “APPAGATO: an Approximate Parallel and stochastic GrAph querying Tool for biological networks”. BIOINFORMATICS, vol. 32 (14), p. 2159-2166, doi:10.1093/bioinformatics/btw223.
- Rinnone F, **MICALE G**, Bonnici V, Bader G D, Shasha D, Ferro F, Pulvirenti P, Giugno R (2015). “NetMatchStar: an enhanced Cytoscape network querying app”. F1000RESEARCH, vol. 4 (479), doi:10.12688/f1000research.6656.1.
- **MICALE G**, Ferro A, Pulvirenti A, Giugno R (2014). “SPECTRA: an Integrated Knowledge Base for Comparing Tissues and Tumor Specific PPI Networks in Human”. FRONTIERS IN BIOENGINEERING AND BIOTECHNOLOGY, vol. 3 (58), doi:10.3389/fbioe.2015.00058.
- **MICALE G**, Pulvirenti A, Giugno R, Ferro A (2014). “Proteins comparison through probabilistic optimal structure local alignment”. FRONTIERS IN GENETICS, vol. 5 (302), doi:10.3389/fgene.2014.00302.
- **MICALE G**, Continella A, Ferro A, Giugno R, Pulvirenti A (2014). “GASOLINE: a Cytoscape app for multiple local alignment of PPI networks”. F1000RESEARCH, vol. 3 (140), doi:10.12688/f1000research.4537.1.
- **MICALE G**, Pulvirenti A, Giugno R, Ferro A (2014). “GASOLINE: A Greedy And Stochastic algorithm for Optimal Local multiple alignment of Interaction Networks”. PLOS ONE, vol. 9 (6) : e98750, doi:10.1371/journal.pone.0098750.

Book chapters

- Alaimo S, **MICALE G**, La Ferlita A, Ferro A, Pulvirenti A (2019). “Computational methods to investigate the impact of miRNAs on pathways”. METHODS IN MOLECULAR BIOLOGY (Clifton, N.J.), Springer, 1970, pp. 183-209, doi:10.1007/978-1-4939-9207-2_11.
- Mongiovì M, **MICALE G**, Ferro A, Giugno R, Pulvirenti A, Shasha D (2016). “gLabTrie: a data structure for motif discovery with constraints”. ADVANCES IN GRAPH DATA MANAGEMENT, Springer Verlag, eds: Fletcher, Hidders, Larriba-Pey.

Conference papers

- Locicero G, **MICALE G**, Pulvirenti A, Ferro A (2021). “TemporalRI: A Subgraph Isomorphism Algorithm for Temporal Networks”. INTERNATIONAL CONFERENCE ON COMPLEX NETWORKS AND THEIR APPLICATIONS (Complex Networks 2020), pp. 675-687.
- Martorana E, **MICALE G**, Ferro A, Pulvirenti A (2019). “Establish the expected number of injective motifs on unlabeled graphs through analytical models”. INTERNATIONAL CONFERENCE ON COMPLEX NETWORKS AND THEIR APPLICATIONS (Complex Networks 2019), pp. 255-267.
- Aparo A, Bonnici V, **MICALE G**, Ferro A, Shasha D, Pulvirenti A, Giugno R (2018). “Simple pattern-only heuristics lead to fast subgraph matching strategies on very large networks”. INTERNATIONAL CONFERENCE ON PRACTICAL APPLICATIONS OF COMPUTATIONAL BIOLOGY AND BIOINFORMATICS, pp. 131-138.
- Petermann A, **MICALE G**, Bergami G, Rahm E (2017). “Mining and ranking of generalized multi-dimensional frequent subgraphs”. DIGITAL INFORMATION MANAGEMENT (ICDIM) 2017, pp. 236-245. Fukuoka, 12-14 Settembre 2017.

- Sardina D S, **MICALE G**, Ferro A, Giugno R (2016). “Correlation between Proteomic Network Inference and Protein-Protein Interaction Networks”. CIBB 2016 Main Track. Stirling 1-3 September 2016.

Oral presentations

- MICALE G, Pulvirenti A, Ferro A, Giugno R, Mongiovi M, Shasha D (2017). “Fast analytical methods for finding significant colored graphs”. SECS 2017. Lipari Island, 9-14 September 2017.
- Martorana E, **MICALE G**, Ferro A, Pulvirenti P (2017). “An analytical model to infer the significance of induced network motifs”. SUMMER SOLSTICE 2017: 9th International Conference on Discrete Models of Complex Systems. Catania, 21-23 June 2017.
- **MICALE G**, Pulvirenti A, Giugno R, Ferro A (2012). “A greedy and stochastic algorithm for multiple local alignment of interaction networks”. BITS 2012. Catania, 2-4 May 2012.

Educational activities

- 02/07/2011 - 09/07/2011: participation to Lipari School for Scientific Research on Bioinformatics and Computational Biology titled “Biological Sequence Analysis and High Throughput Technologies”, Lipari Island, Italy;
- 11/03/2012 - 16/03/2012: participation to Bertinoro International Spring School (BISS 2012), Bertinoro, Italy;
- 11/04/2012 - 24/04/2012 participation to 35 hours training course “PhD plus: il dottorato si fa strada” at University of Pisa, Italy.
- 07/07/2012 - 14/07/2012: participation to Lipari School for Scientific Research on Bioinformatics and Computational Biology titled “Pharmacogenomics”, Lipari Island, Italy;
- 14/07/2012 - 21/07/2012: participation to Lipari School for Scientific Research on Computational Complex Systems titled “Data Mining and modeling of complex techno-socio-economic systems”, Lipari Island, Italy;
- 06/07/2013 - 13/07/2013: participation to Lipari School on Computational Complex Systems titled “Dynamic Networks and Social Behavior”, Lipari Island, Italy;
- 13/07/2013 - 20/07/2013: participation to Lipari School for Scientific Research on Bioinformatics and Computational Biology titled “Computational Network Biology”, Lipari Island, Italy
- 20/07/2013 - 27/07/2013: participation to Lipari School for Scientific Research on Computational Social Science titled “Big Data”, Lipari Island, Italy;
- 12/07/2014 - 19/07/2014: participation to Lipari School for Scientific Research on Bioinformatics and Computational Biology titled “Computational Genomics and Personalized Medicine”, Lipari Island, Italy;
- 20/07/2014 - 26/07/2014: participation to Lipari School for Scientific Research on Computational Social Science titled “Modeling Spatio-Temporal Reasoning in Complex Social Systems”, Lipari Island, Italy;
- 19/07/2015 - 25/07/2015: participation to Lipari School for Scientific Research on Bioinformatics and Computational Biology titled “Computational Dynamic Analysis of Biological Processes”, Lipari Island, Italy;
- 26/07/2015 - 01/08/2015: participation to Lipari School for Scientific Research on Computational Social Science titled “Algorithms, Data and Models for Social and Urban Systems”, Lipari Island, Italy;
- 06/09/2015 - 12/09/2015: participation to Lipari School for Scientific Research on

GROWTHCOM Project Summer School titled “Socio-Economic Complex Systems”, Lipari Island, Italy;

- 10/07/2016 - 17/07/2016: participation to Lipari School for Scientific Research on Computational Complex and Social Systems titled “Computational Social Science”, Lipari Island, Italy;
- 17/07/2016 - 24/07/2016: participation to Lipari School for Scientific Research on Computational Life Sciences titled “Computational Microbiology and Microbiome-Based Medicine”, Lipari Island, Italy;
- 29/08/2016 - 02/09/2016: participation to Lipari School for Scientific Research on Complex networks titled “From socio-economic systems to biology and brain”, Lipari Island, Italy;
- 09/07/2017 - 15/07/2017: participation to Lipari School for Scientific Research on Computational Life Sciences titled “Computational Drug Science and High-Precision Medicine”, Lipari Island, Italy;
- 11/09/2017 - 13/09/2017: participation to Lipari School for Scientific Research on Computational Life Sciences titled “Computational Drug Science and High-Precision Medicine”, Lipari Island, Italy;
- 09/07/2017 - 15/07/2017: tutorial for Lipari School for Scientific Research on Computational Life Sciences titled “Network-based drug interaction analysis”, Lipari Island, Italy;
- 10/07/2018 - 16/07/2018 participation to Lipari School for Scientific Research on Complex networks “From socio-economic systems to biology and brain”, Lipari Island, Italy;
- 25/07/2018 - 31/07/2018 participation to Lipari School for Scientific Research on Computational Life Sciences titled “Computational Immunology, Immunotherapy and Autoimmune Diseases”, Lipari Island, Italy.
- 20/07/2019 - 25/07/2019 participation to Lipari School for Scientific Research on Computational Complex and Social Sciences titled “Data Science”, Lipari Island, Italy.
- 26/07/2019 - 31/07/2019 participation to Lipari School for Scientific Research on Computational Life Sciences titled “Computational Metabolomics and Metabolic Diseases”, Lipari Island, Italy.

Teaching activities

- In academic year 2021/2022 co-teaching course of Metodologia Scientifica e Linguistica (5 CFU) for the Master Degree in Odontoiatria e Protesi Dentaria, University of Catania.
- In academic year 2021/2022 teaching course of Introduction to Data Mining (9 CFU) for the Bachelor Degree in Computer Science, University of Catania.
- In academic years 2016/2017 and 2021/2022: teaching Computer Science module (3 CFU) of integrated course of Physics, Computer Science and Statistics for Master Degree in Medicine and Surgery, University of Catania.
- In academic year 2020/2021 teaching course of Abilità Informatiche for Master Degree in Scienze e Tecniche delle attività motorie preventive e adattate (2 CFU), University of Catania.
- In academic year 2020/2021 co-teaching course of Introduction to Data Mining (9 CFU) for the Bachelor Degree in Computer Science, University of Catania.
- In academic years 2020/2021 and 2021/2022 co-teaching course of Bioinformatics (6 CFU) for the Master Degree in Computer Science, Università di Catania.
- 16/02/2018 - 16/03/2018 course of Introduction to Bioinformatics (30 hours) for High School

students at Liceo Scientifico “Boggio Lera” di Catania, for the National Project Alternanza Scuola-Lavoro.

- 06/03/2017 - 16/05/2017: course of Introduction to Bioinformatics (30 hours) for High School students at Liceo Scientifico “Ettore Majorana” di Scordia (Catania, Italy), for the National Project Alternanza Scuola-Lavoro.
- 30/05/2016 - 15/06/2017: course of Introduction to Bioinformatics (30 hours) for High School students at Liceo Scientifico “Boggio Lera” di Catania (Catania, Italy), for the National Project Alternanza Scuola-Lavoro.

Reviewer activities for peer-reviewed journals

- Since 2019 reviever for the following journals: BMC Bioinformatics, BMC Medical Genomics, MDPI Genes and MDPI Algorithms.

Date **June 4th, 2022**

Sign