

Andrea Gobbi

Curriculum Vitæ

Education

- 2010–2013 **Doctoral School in Mathematics**, *University of Trento (Italy)*.
- 2008–2010 **Master degree in Mathematics**, *University of Trento (Italy)*.
110 cum laude.
- 2005–2008 **Bachelor degree in Mathematics**, *University of Trento (Italy)*.
110 cum laude.
- 2000–2005 **Scientific graduation**, *Liceo Scientifico "Jacopo da Ponte" Bassano D.G.*
98/100

Ph.D Dissertation

- title *Theoretical and algorithmic solutions for null models in network theory.*
relator Prof. Andrea Caranti, Dr. Giuseppe Jurman

Master degree

- title *Algebraic reconstruction of gene regulatory networks.*
relator Prof. Andrea Caranti, Dr. Giuseppe Jurman

Bachelor degree

- title *Algebraic and combinatorial techniques for stability algorithms on ranked data.*
relator Prof. Andrea Caranti, Dr. Giuseppe Jurman

Work experiences

- 2016–Now **Technologist**, *Fondazione Bruno Kessler, Trento*.
Data Scientist: big data analysis, mathematical models, programming, machine learning, deep learning.
- 2013/2015 **Term-contract researcher**, *Fondazione Bruno Kessler, Trento*.
Data Scientist: big data analysis, mathematical models, programming.
- 2013/14 **Teaching assistant**, *University of Trento*.
Teaching assistant for the course *Analisi matematica 1* Prof. Gabriele Greco for the course of Mathematics and Physics
- 2012/13 **Teaching assistant**, *University of Trento*.
Teaching assistant for the course *Analisi matematica 1* Prof. Gabriele Greco for the course of Mathematics and Physics

- 2012 **Tutor**, *University of Trento*.
Tutor for first-year student in Mathematics and Physics.
- 2011 **Mathematical consultant**, *Fondazione Bruno Kessler*, Trento.
Mathematical modeling for industry and sanity.
- 2010 **Mathematical consultant**, *Fondazione Bruno Kessler*, Trento.
Development of monodimensional kernel integrated to GIS platform.
- 2008 **Tutor**, *University of Trento*.
Tutor for first-year students in Informatics.
- 2006 **Mathematical consultant**, *Tecnigold S.p.a.*, Borso del Grappa (TV).
Mathematical algorithms for computer vision applied to jewelery products quality control.

Undegraduated collaborations

- Alessandro Battisti: *Deep Learning to Evaluate Alpine Skiers from Fixed Camera Videos*
- Marco Dallagiacom: *Predicting risk for downhill skiers*
- Enrico de Guidi: *A geoitc approach to skiing traffic analisys*
- Elisa Solano: *Herramientas geoespaciales, hacia la mejora del acceso geografico a servicios de salud Cusco Perú*
- Matteo Poletti: *An Open Source implementation of a particle-based model for skiing dynamics*
- Davide Kirchner: *Data structures and algorithms for Skiing Traffic Modeling*

Publications: conferences

- 2017 **Coupling Early Warning Services, Crowdsourcing, and Modelling for Improved Decision Support and Wildfire Emergency Management**, *Bielski, C. and Gobbi, A. et al.*, IEEE BigData 2017, Data Science for Emergency Management, Boston, MA, USA 11-14 December.
Short paper + Workshop Proceedings
- 2017 **A Heat Wave Forecast System for Europe**, *Gobbi, A. and Alikadic, A. and Ylinen, K. and Anagramo, F. and Furlanello, C.*, IEEE BigData 2017, Data Science for Emergency Management, Boston, MA, USA 11-14 December.
Short paper + Workshop Proceedings
- 2015 **Assembling Information: dynamic dashboards for actionable data analytics**, *Arbitrio, E. and Filosi, M. and Gobbi, A. and Furlanello, C.*, Europython'15, Bilbao, Spain 20–26 July.
Poster session
- 2015 **Assembling Information: dynamic dashboards for actionable data analytics**, *Furlanello, C. and Arbitrio, E. and Gobbi, A. and Dolci, C. and Jurman, G.*, NTTS2015, Special Session on Visualization for Data Dissemination, Bruxelles 10 March .

- 2013 **Fast randomisation of large genomic datasets while preserving alteration counts**, *Gobbi, A. and Iorio, F. and Dawson, K. J. and Wedge, D. C. and Tamborero, D. and Alexandrov, L. B. and Lopez-Bigas, N. and Garnett, M. J. and Jurman, G. and Saez-Rodriguez, J.*, ECCB14, Strasbourg, France, 7-10 September.
Oral presentation
- 2013 **Randomisation of next generation sequencing data while preserving genomic event distributions**, *Gobbi, A. and Iorio, F. and Wedge, D. and Dawson, K. and Ludmil, A. F. and Jurman, G. and Saez-Rodriguez, J.*, MLCB-NIPS 2013, Lake Tahoe, Nevada, United States, 10 December.
Poster session
- 2013 **SICURSKIWEB: a geoITC platform for skiing safety data**, *De Filippi, R. and Dolci, C. and Gobbi, A. and Kirchner, D. and Poletti, M. and Droghetti, S. and Furlanello, C.*, ICSS 2013, St. Christoph a. Arlberg, 14-19 December.
- 2013 **Randomisation of bipartite network preserving the degree distribution**, *Gobbi, A. and Iorio, F. and Wedge, D. and Dawson, K. and Ludmil, A. F. and Jurman, G. and Saez-Rodriguez, J.*, International conference NetSci13, Copenhagen, 03-07 July.
Poster session
- 2013 **Newer bounds in the Switching Algorithm: fixed point and time convergence**, *Gobbi, A. and Jurman, G.*, Complex Networks meet Machine Learning satellite di NetSci13, Copenhagen, 03-07 July.
Contributed talk
- 2011 **New functionalities of v.kernel GRASS module**, *Dolci, C. and Gobbi, A. and Franch, G. and Blazek, R. and Jurman, G. and Furlanello, C.*, XII Meeting GRASS and GFOSS Italian users, Trento, 09-11 February.
Talk

Publications: selected articles

- 2017 **A Heat Wave Forecast System for Europe**, *Gobbi, A. and Alikadic, A. and Ylinen, K. and Anagramo, F. and Furlanello, C.*, IEEE BigData 2017, Data Science for Emergency Management.
pp. 3734-3738 doi: 10.1109/BigData.2017.8258371
- 2016 **Efficient randomization of biological networks while preserving functional characterization of individual nodes**, *Iorio, F. and Bernardo-Faura, M. and Gobbi, A. and Cokelaer, T. and Jurman, G. and Saez-Rodriguez, J.*.
Bioinformatics 2016 17 (1): i542- doi: 10.1186/s12859-016-1402-1
- 2015 **A null model for Pearson coexpression networks**, *Gobbi, A. and Jurman, G.*.
PLOS ONE, 2015, 10(6) i1-i21, doi: <https://doi.org/10.1371/journal.pone.0128115>

- 2014 **Fast randomisation of large genomic datasets while preserving alteration counts**, *Gobbi, A. and Iorio, F. and Dawson, K. J. and Wedge, D. C. and Tamborero, D. and Alexandrov, L. B. and Lopez-Bigas, N. and Garnett, M. J. and Jurman, G. and Saez-Rodriguez, J.*
Bioinformatics 2014 30 (17): i617-i623 doi: 10.1093/bioinformatics/btu474
- 2013 **R Package *BiRewire*: High-performing routines for the randomization of a bipartite graph, or an event matrix, preserving the degree distribution**, *Gobbi, A and Albanese, D. and Iorio, F. and Jurman G. and Saez-Rodriguez, J.*
Available since Bioconductor 13

Awards

- 2014 **Honorable Proceedings Papers**, *Fast randomisation of large genomic datasets while preserving alteration counts.*

Languages

- Italian **Native language**
English **B1**

Data analysis skills

- Deep learning: RNN, RNN, Embeddings
- Machine learning: sklearn regressors and classifiers
- Time series analysis and forecasting/nowcasting
- Data mining
- Geospatial analysis and Geostatistics
- Data processing & cleaning
- Feature extraction & data enrichment

Network analysis skills

- Basic descriptive analysis
- Programming with common network-object
- Ad hoc path research algorithms
- Null models for some classes of graphs
- Visualisation also for time-evolving graphs
- Kernel density estimation over networks
- Analysis of projected and dual graphs
- Modelization of games using network: abstractions and strategies

Bioinformatics skills

- Basics of system biology and network in biology
- Techniques for reconstruction of gene regulatory network

- Randomisation of NGS datasets
- Algebraic techniques for ranked data
- Null models for coexpression network
- Generative models for graphs with given characteristic

Geoinformatic skills

- Geodatabases
- Analysis of georeferenced data and spatial correlation
- Geographic manipulation of raster and vectorial data
- Geovisualization

Informatics skills

Operative Systems	Windows and Unix
Database	Postgresq, PLR extension to R, Arangodb
Programming languages	C, C++, C#, phyton, R, Java, SQL, javascript, html, gdal
Scientific computational environments	Sage, Maple, MATLAB, GRASS
Visualisation tool	cytoscape, igraph, yEd, Gephi, matplotlib, QGIS
Dashboards	superset, grafana
Utils	git, anaconda

I consent to the use of my personal data in accordance with the provisions of decree 196/2003.