

Curriculum Vitae

INFORMAZIONI PERSONALI

Nome GIOSUE'
Cognome LO BOSCO
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FORMAZIONE TITOLI

EDUCATION

- Degree in Mathematics at the University of Palermo, April 2000.
- Phd in Mathematics and Computer Science at the University of Palermo, January 2005.

FACULTY POSITIONS

- Postdoc position from June 2005 until March 2008 at the University of Palermo.
- Assistant professor from March 2008 to October 2018 at the University of Palermo.
- Associate professor from October 2018 to January 2025 at the University of Palermo.
- Full professor from February 2025

INTERNATIONAL EXPERIENCES

- February 6 – July 30 1996: Erasmus scholarship - Laboratoire de l'Informatique du Parallélisme - Ecole Normale supérieure de Lyon, France.
- June 1996: Erasmus scholarship – Dept. of Mathematics and Natural Sciences, University of Leiden (The Netherlands).
- July – October 2002: Visiting student at California Institute of Technology, Pasadena, USA.

ITALIAN NATIONAL SCIENTIFIC QUALIFICATION

- Associate professor (SECONDA fascia) SSD INF/01 (01/B1) 17/10/2016 (ASN 2013)
- Full Professor (PRIMA fascia) SSD ING-INF/05 (09/H1) 02/02/2022 (ASN 2021)
- Full Professor (PRIMA fascia) SSD INF/01 25/05/2022 (ASN 2018 V quadrimestre).

ATTIVITA' DIDATTICA

TEACHING ACTIVITY

- Data structures and Algorithms: 2004, 2005, 2006, 2007, 2008, Bachelor in Computer Science, Università di Palermo.
 - Statistical Learning: 2008, 2009, 2010, Master's Degree in Information Sciences, Università di Palermo.
 - Operating Systems: 2008, 2009, Bachelor in Computer Science, Università di Palermo.
 - Data Processing Systems: 2011, 2012, Bachelor in Computer Science, Università di Palermo.
 - Statistics: from 2004 to 2009, Scuola di Specializzazione in Anatomia Patologica, Università di Palermo. In 2011, 2012, Master di II livello in Biotecnologie applicate e bioinformatica nello studio e la diagnosi di malattie genetiche, Università di Palermo.
 - Algorithms for Microarray Data Analysis: In 2011, 2012, Master di II livello in Biotecnologie applicate e bioinformatica nello studio e la diagnosi di malattie genetiche, Università di Palermo.
 - Methodologies for Data Analysis: from 2012 to 2014, Bachelor in Computer Science, Università di Palermo.
 - Algorithms for Data Analysis: 2015, 2016 Bachelor in Computer Science, Università di Palermo.
- Biomedical Data Analysis: 2015, 2016, 2017, 2018 Master's Degree in Computer Science, Università di Palermo.
- Artificial Intelligence and Deep Learning, 2019, 2020, 2021, 2022 Master's Degree in Computer Science, Università di Palermo.
- Computer Programming, 2019, 2020, 2021, 2022, 2023 Bachelor in Computer Science, Università di Palermo.
- Artificial Intelligence and Deep Learning, 2024, 2025, 2026 Master's Degree in Data Algorithms and Machine Intelligence, Università di Palermo.
- Machine Learning, 2024, 2025, 2026 Bachelor in Artificial Intelligence, Università di Palermo.

INVITED TALKS

- Tutorial Speaker at the Lipari School on Bioinformatics and Computational Biology "Statistical and Machine Learning Methods in Computational Biology", 2010.
- Tutorial Speaker at the Lipari School on Bioinformatics and Computational Biology, "Sequence Analysis and High Throughput Technologies", 2011.
- Tutorial Speaker at the Lipari School on Bioinformatics and Computational Biology, "Pharmacogenomics", 2012.
- Tutorial Speaker at the Lipari School on Bioinformatics and Computational Biology, "Computational Genomics and Personalized Medicine", 2014.
- Invited lecture "Machine (Deep) Learning models for structured and unstructured data", Computational Intelligence Lectures organized by the IEEE Computational Intelligence Society Italy, 17/12/2021

RICERCHE FINANZIATE

Research Projects

- 2003-2007 FIRB 2001 dal titolo BioInformatica per la Genomica e la Proteomica. Research group member.
- 2003-2005 PRIN 2003 "Sistema automatico di acquisizione e modellazione 3D a basso costo (LIMA3D). Research group member.
- 2004-2006 PRIN 2004 "Metodologie di data mining per le applicazioni di ebusiness". Research group member.
- 2006-2008 PIS2 PON "Ricerca" 2000-2006 "Progetto per l'Implementazione e lo Sviluppo di una e-Infrastruttura in Sicilia basata sul paradigma della GRID. Research group member.
- 2006-2008 PNR 2005-2007 "ASIC-Applicazioni e Servizi Innovativi di Comunicazione Voce/Video/Dati". Research group member.
- 2013-2015 PON 2007-2013 PON04A2c "SMART HEALTH - CLUSTER OSDH - SMART FSE - STAYWELL". Head of Research Unit.
- 2014-2016 PON Smart Cities and Communities SCN00447 "ADAPT: Accessible Data for Accessible Prototypes in Social Sector". Head of Research Unit.
- 2013-2016 PRIN 2010-2011 "Automati e Linguaggi Formali: aspetti matematici e applicativi". Research group member.
- 2016-current PON 2007-2013 "Studio di Strategie Terapeutiche Mediche Innovative guidate da Imaging Molecolare e Proteogenomica: applicazione in Oncologia e Neurologia". Head of Research Unit.
- 2019-current Prin 2017 "Multicriteria Data Structures and Algorithms: from compressed to learned indexes, and Beyond". Research group member.
- 2022-current PNRR PNC "HUB2 - DARE - DIGITAL LIFELONG PREVENTION". Work Package Responsibility, Research Group member.
- 2024-current PNRR MUR M4C2 Iniziativa 1.4 - Centri Nazionali (CN) "TEcniche non Convenzionali per l'anaLisi di immagini Astrofisiche ". Head of Research Unit.
- 2024-current Erasmus Plus International Capacity Building "Advancing Data Literacy and Innovation in the Western Balkans ". Scientific coordinator for the University of Palermo.
- 2024-current PNC-F.3 - Ministero delle Imprese e del Made in Italy "ATENA - diAgnostica innovaTiva degli impianti di sicurEzza e segNalamento ferroviArio". Scientific Coordinator.

INCARICHI / CONSULENZE

Associate Chair (Vice-direttore), Department of Mathematics and Computer Science (October 2022-November 2024).

Member of the Unit responsible for the internal Quality Assurance system of the University of Palermo (Presidio di Qualità, PQA) (October 2022-now).

Member of the Scientific Council of the University of Palermo (Consiglio Scientifico di Ateneo) (May 2023-now).

Co-Chair of CIS11, the IEEE Italy Computational Intelligence Society Chapter (January 2024-now).

ATTIVITA' SCIENTIFICHE

PROGRAM COMMITTEE PARTICIPATIONS

IbPRIA 2011; CPM 2011; PPSN2012; IbPRIA 2013; PPSN2014; VISAPP 2014; VISAPP 2015; KES-InMed-15; CIBB 2015; ICIAP 2015; VISAPP 2016; PPSN2016; KES-InMed-16; CIBB2016; MOD 2016; BITS 2016; VISAPP 2017; CIBB2017; KES-InMed-17; BIOKDD'17; ICIAP 2017; MOD 2017; NETTAB 2017; VISAPP 2018; PDP2018; GECCO 2018; PPSN 2018; LOD 2018; BIOKDD'18; BITS 2018; PPSN 2018; LOD 2018; BITS 2018; VISAPP 2019; CIBB 2018; GECCO 2019; CIBB 2019; KES-InMed-19; LOD 2019; ICIAP 2019; ICANN 2019; PPSN 2020; KES-InMed-20; VISAPP 2020; FAPER 2020; MAES 2020; GECCO 2020; iABC'20; IEEE EAIS 2020; SCSN 2020; LOD 2020; SCSN2021; KES-InMed-21; VISAPP 2021; WILF 2021; CIBB 2021; IEEE EAIS 2022; SCSN 2022; PPSN 2022; GECCO 2022; SCSN 2023; CIBB 2023; AIXEDU2023; GECCO 2023; Kes-InMed-24; VISAPP 2024; CIBB 2024; Helmeto 2024; ECAI-2024; GECCO 2024; PPSN 2024; ECAI 2025; GECCO 2025;

EVENTS ORGANIZATION

- General Chair of BITS 2019, Bioinformatics Italian Society Annual Meeting 2019, June 26-28, Palermo, Italy.
- Local Chair of the following events: CIBB 2010, Seventh International meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics; CPM 2011, 22nd Annual Symposium on Combinatorial Pattern Matching; WILF2016: The Eleventh International Workshop on Fuzzy Logic and Applications; 6th Workshop on Data Analysis in Astronomy: Modelling and Simulation in Science, Wilf 2009, International Workshop on Fuzzy Logic and Applications, 7th Workshop on Data Analysis in Astronomy: Science: IMAGe IN AcTION.
- Tutorial Co-Chair International Conference on Image Analysis and Processing (ICIAP) 2013;

- Special Session Co-Chair: “Bio-curation and integration of biomedical databases” at 13th international conference on Computational Intelligence methods for Bioinformatics and Biostatistics CIBB2016; “Neural Networks meet Natural and Environmental Sciences” at 26th International Conference on Artificial Neural Networks ICANN 2017; “Soft Computing Methods For Characterizing Diseases From Omics Data” at 15th international conference on Computational Intelligence methods for Bioinformatics and Biostatistics CIBB2018.
- Workshop Co-Chair: BITS2019-Algorithms and Tools for the Analysis of Big Omics Data;
- Special Session Co-Chair: 2020 IEEE Conference on Evolving and Adaptive Intelligent Systems.
- General Co-Chair: 4th International Conference on Higher Education Learning Methodologies and Technologies.
- Special Session Co-Chair: 2024 IEEE Conference on Evolving and Adaptive Intelligent Systems
- General Co-chair: 26th International Conference on Artificial Intelligence in Education.
- General Co-chair: Educational Data Mining 2025

EDITORIAL ACTIVITIES

Books:

1. V. Di Gesu', G. Lo Bosco, M.C. Maccarone (Eds.) , “Modelling and Simulation in Science”, Proceedings of the 6th International Workshop on Data Analysis in Astronomy <<Livio Scarsi>>, Erice (Italy), April 2007, World Scientific Publishing, Singapore, ISBN: 13-978-981-277-944-1
2. B. Zavidovique, G. Lo Bosco (Eds.) , “SCIENCE: IMAGE IN ACTION”, Proceedings of the 7th International Workshop on Data Analysis in Astronomy “Livio Scarsi and Vito Di Gesu”, Erice (Italy), April 2011, World Scientific Publishing, Singapore, ISBN: 13-978-981-4383-28-8.
3. Fulantelli, G., Burgos, D., Casalino, G., Cimitile M., Lo Bosco, G., Taibi, D. (2023). Higher Education Learning Methodologies and Technologies Online, 4th International Conference, HELMeTO 2022, Palermo, Italy, September 21–23, 2022, Revised Selected Papers ISBN 978-3-031-29799-1.

Special issues:

1. A. Urso, A. Fiannaca, M. La Rosa, L. La Paglia, G. Lo Bosco, R. Rizzo, BITS2019: The sixteenth annual meeting of the Italian society of bioinformatics, BMC Bioinformatics 2020, Vol 21, N. 363.

Journals:

1. Associate Editor of BMC Bioinformatics, ISSN: 1471-2105, Springer Nature
2. Associate Editor of Information Sciences, ISSN: 0020-0255, Elsevier

AMBITI DI RICERCA

- Machine Learning: Supervised and unsupervised classification of multidimensional data, deep learning models for classification.
- Bioinformatics: Gene expression data clustering, pattern identification in bio signals, DNA sequence analysis and classification
- Natural Language Processing: Sentiment classification, sarcasm detection, automatic evaluation of text complexity.
- Heuristics for optimization: Evolutionary Algorithms, simulated Annealing.
- Image analysis: Segmentation of digital images, biomedical image classification.
- Virtual/augmented/mixed reality.

ALTRE ATTIVITA

Scholarship, PhD and PostDoc

- 2009-2012 Francesco Benvegna (pHd, co-supervised): Metrics, clustering and simulations to evaluate seismic signals.
- 2014-2015 Marco Alfano (postDoc): Metodologie per l'estrazione e l'integrazione di caratteristiche da dati biomedici.
- 2014-2015 Valerio Perticone (scholarship): Sviluppo di Software per la gestione di dati clinici.
- 2017-2018 Marco Alfano (PostDoc): Analisi di Dati e Progettazione di Servizi ICT in Ambito Socio Sanitario.
- 2017-2020 Daniele Schicchi (pHd): Sentence Complexity Evaluation for Italian and English Language through Deep Learning Methodologies.
- 2018-2022 Domenico Amato (pHd): A Tour of Learned Static Sorted Sets Dictionaries: From Specific to Generic with an Experimental Performance Analysis.
- 2021-2024 Andrea Di Benedetto (pHd): Computational Models for the Analysis of seismo-volcanic traces.
- 2021-2024 Salvatore Calderaro (pHd): Embedding Techniques for Biomedical and Biological Data Interpretable Methods and Applications.

- 2020-2024 Mariella Farella (pHD): Digital solutions for Immersive Virtual Reality exploration of Cultural Heritage sites