Curriculum Vitae

Dott. Marco Beccuti
Dipartimento Informatica
Università degli studi di Torino
C.So Svizzera, 185 - 10149 Torino (Italy)
Tel: +39 011 6706780 Fax: +39 011 751603
Email: marco.beccuti@unito.it
Web page: *http://www.di.unito.it/∼beccuti*

Personal information

Nationality: Italian;

Date of birth: 05 July 1978;

Place of birth: Novi Ligure (AL) ITALY;

Current position: Associate Professor at the Dept. of Computer Science in the Università degli Studi di Torino.

Research interests

His research is currently mainly focused on computational modeling and simulation of complex systems. In particular he is interested in:

- Stochastic and hybrid modeling languages;

- Exact and approximated techniques to analysis the behavior of complex systems;

- Applications to computational Systems Biology.

Moreover he works on design of bioinformatics algorithms and workflows for the analysis of deep sequencing data (i.e. genomic, transcriptomic and single cell data) with particular emphasis on reproducibility aspects.

Education

- *21st January 2008* "Ph.D." in Computer Science at the Università degli Studi di Torino in cooperation ("Cotutela") with the LAMSADE laboratory, Universitè Paris Dauphine, Paris, France.

1

Ph.D thesis title *Modeling and analysis of probabilistic systems. Formalisms and efficient algorithms*

Advisors Prof. G. Franceschinis (Univ. degli Studi del Piemonte Orientale) and Prof. S. Haddad (Univ. Paris Dauphine).

- *16th April 2004* "Laurea" in Computer Science 110/110 cum laude at the Università degli Studi del Piemonte Orientale "A. Avogadro"

  "Laurea" thesis title *Trattamento delle simmetrie parziali nelle reti di Petri Stocastiche Ben Formate* (Exploiting partial symmetries in Stochastic Well Formed Nets)

Professional experience

- *July 2023* National scientific qualification to function as Full Professor in Italian Universities (Area: Computer science 01/B1).

- *October 2021-today.* Chair of the Scientific Committee of the "HPC4AI" laboratory at Department of Computer Science of University of Turin.

- *September 2021-today.* Scientific Coordinator of "InfoLife National Laboratory" of CINI (`https://www.consorzio-cini.it/index.php/it/laboratori-nazionali/laboratori-infolie`).

- *February 2021-today.* Co-leader of "Genomic and Transcriptomic Data" at ELIXIR-IT COVID-19 Data Portal (`https://www.covid19dataportal.it/`).

- *February 2021-today.* Co-leader of "Imaging Data" at ELIXIR-IT COVID-19 Data Portal (`https://www.covid19dataportal.it/`).

- *February 2021-today.* Co-leader of "Health Data" at ELIXIR-IT COVID-19 Data Portal (`https://www.covid19dataportal.it/`).

- *November 2020-today.* Associate professor at the Department of Computer Science in the Università degli Studi di Torino.

- *September 2020-today.* Scientific Coordinator of the laboratory "HPC for biomed and AI" in ICxT

- *April 2020-October 2021* Referent of InfoLife laboratory for the Task Force COVID-19 of CINI (National Interuniversity Consortium for Informatics).

- *April 2020-today.* Member of the working group on "epidemiological modelling for COVID-19 outbreak" of Piedmont Regional Emergency Task Force.

- *January 2019-today.* Instructors of ELIXIR-IIB courses. (`https://elixir-iib-training.github.io/website/trainers/`).

- *January 2019-today.* Technical Coordinator of ELIXIR Node at the Università degli Studi di Torino.

- *October 2018-today.* Ordinary Member of Bioinformatics ITalian Society (BITS).

- *November 2017-October 2020* Assistant Professor (with tenure track) at the Department of Computer Science in the Università degli Studi di Torino.

- *April 2017.* National scientific qualification to function as Associate Professor in Italian Universities (Area: Computer science 01/B1 and Computer Engineering 09/H1).

- *November 2014.* Visitor professor at the Jagiellonian University: Prof. Maciej Malecki and Prof. Pawel Wolkow.

- *January 2013.* Visitor at the University of King Abdulaziz. Collaborator: Prof. Omar Barukab.

- *October 2012-October 2017* Assistant Professor (non-tenure track) at the Department of Computer Science in the Università degli Studi di Torino.

- *June 2011-September 2011.* Visitor at the University of California Riverside. Collaborator: Prof. Gianfranco Ciardo.

- *March 2011 - September 2012* Two years research fellowship on the project "Modelli ad alto livello per la specifica di Processi Decisionali Markoviani con applicazioni alla definizione di strategie ottimali di manutenzione preventiva o recupero da malfunzionamenti in sistemi critici" at the Universitá degli Studi di Torino (Assegni di ricerca cofinanziati dalla regione Piemonte "contenimento del brain drain").

- *March 2009 - February 2011.* Two years research fellowship on the project "Modelli ad alto livello per la specifica di Processi Decisionali Markoviani con applicazioni alla definizione di strategie ottimali di manutenzione preventiva o recupero da malfunzionamenti in sistemi critici" at the Universitá degli Studi di Torino (Assegni di ricerca cofinanziati dalla regione Piemonte "contenimento del brain drain").

- *January 2008-Dicember 2008.* One term contract on the project "Efficient Multi-level dependability models and analysis algorithms for studying the interdependencies between the Electricity and Information Infrastructures" at the National Inter-University Consortium for Telecommunications (CNIT).

- *April 2006-today.* Member of Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT) (Research Unit of the Dipartimento di Informatica, Università degli Studi di Torino)

- *June 2006 - July 2007* visiting scholar at the LAMSADE laboratory, Universitè Paris Dauphine and at the Laboratorie d'informatique de Paris.

- 7th - 22th *March 2005* Bertinoro International Spring School for Graduate Studies in Computer Science 2005 (BISS05)

- *September 2004-today.* Responsible for the maintenance and distribution of the GreatSPN software (http://www.di.unito.it/~greatspn)

- *August 2004 - August 2005* One year research scholarship on the project "Efficient Algorithms for stochastic model analysis" at the Computer Science Department of the Università degli Studi del Piemonte Orientale "Amedeo Avogadro" in collaboration with researchers of the University of Paris VI, LIP6 and the University of Paris Dauphine, LAMSADE; partially funded by the Perf project of the Italian Ministry of education and research (MIUR)

- *2002-2010.* Information technology expert at Network Informatica S.R.L. (IT company)

- *1997-2002.* Information technology expert at E.D.P. consulenza informatica (IT company)

Main international collaborations

- Prof. Serge Haddad, Laboratoire Specification et Verification, Ecole Normale Superieure de Cachan, France;

- Prof. Gianfranco Ciardo, Department of Computer Science, Iowa State University, USA;

- Prof. Patrice Moreaux, Polytech Annecy-Chambery, University of Savoie, France;

- Prof. Andrew Miner, Department of Computer Science, Iowa State University, USA;

- Prof. Stefano Lonardi, Computer science and Engineering, University of California Riverside, USA;

- Prof. Omar Barukab, Department of Computer Science, University of King Abdulaziz, Saudi Arabia.

- Ph.D. Robert Birke, ABB Corporate Research, Zurich, Switzerland.

- Prof. Pietro Lio', Department of Computer Science and Technology, the University of Cambridge.

Teaching

Programming I course :
6 CFU - 48 course hours (corso di Informatica - Univ. degli Studi di Torino.)
A.A. 2022/2023 2021/2022, 2020/2021.

Bioinformatics course :
3 CFU - 24 course hours (corso di Biologia - Univ. degli Studi di Torino.)
A.A. 2022/2023, 2021/2022, 2021/2020, 2020/2019, 2018/2019.

Bioinformatics course :
> 1 CFU - 8 course hours (corso di Biologia ed Informatica - Univ. degli Studi di Torino.)
> *A.A. 2017/2018.*

Bioinformatics course :
> 1 CFU - 8 course hours (corso di Informatica - Univ. degli Studi di Torino.)
> *A.A. 2019/2018.*

Bioinformatics course :
> 1/2 CFU - 4 course hours (corso di Informatica - Univ. degli Studi di Torino.)
> *A.A. 2022/2023 2021/2022, 2021/2020, 2020/2019.*

RNA sequence analysis course:
> 24 course hours (Master in Bioinformatics and functional genomics - Univ. degli Studi di Milano)
> *A.A. 2018/2019, 2017/2018.*

Elaborazione Informatica dei Dati Sperimentali course:
> 4CFU - 32 course hours (corso di Biologia - Univ. degli Studi di Torino.)
> *A.A. 2020/2019, 2018/2019, 2017/2018, 2016/2017, 2015/2016, 2014/2015, 2013/2014.*

NGS data analysis: computational aspects.
> 20 course hours (Doctoral School in Life and Health Sciences - Univ. degli Studi di Torino.)
> *A.A. 2018/2019, 2017/2018, 2016/2017, 2015/2016.*

Introduction to bioinformatics
> 20 course hours (Doctoral School in Life and Health Sciences - Univ. degli Studi di Torino.)
> *A.A. 2022/2021, 2021/2020.*

Programming for data science course:
> 3CFU - 25 course hours (Master of Stochastics and Data Science - Univ. degli Studi di Torino.)
> *A.A. 2022/2023 2021/2022, 2021/2020, 2020/2019, 2018/2019, 2017/2018, 2016/2017, 2015/2016.*

Qualitative and probabilistic system verification
> 20 course hours (Doctoral School in Computer Science - Univ. degli Studi di Torino.)
> *A.A. 2017/2018, 2016/2017, 2015/2016, 2014/2015.*

Informatica course:
> 6CFU - 48 course hours (corso di laurea in Ottica e Optometria - Univ. degli Studi di Torino.)
> *A.A. 2012/2013.*

Strumenti e tecniche per la condivisione dei contenuti in rete:
> 6CFU - 44 course hours (corso di laurea in Giurisprudenza - Univ. del Piemonte Orientale.)
> *A.A. 2011/2012, 2010/2011, 2009/2010.*

Programmazione:

6 CFU - 44 course hours (corso di laurea in Giurisprudenza - Univ. del Piemonte Orientale.)
emphA.A. 2008/2009, 2007/2008.

Laboratorio di Informatica di Base

(corso di laurea in Chimica e Biologia)
A.A. 2005/2006.

Esercitazioni del corso di Sistemi di elaborazione: Simulazione

(corso di laurea in Informatica - Univ. del Piemonte Orientale.)
A.A. 2005/2006.

Scientific publications

In Refereed International Journals:

[J55(2024)] S. Alessandri, M.L. Ratto, S. Rabellino, G. Piacenti, S. G. Contaldo, S. Pernice, M. Beccuti, R. A. Calogero, L. Alessandri. ***CREDO: a friendly Customizable, REproducible, DOcker file generator for bioinformatics applications.*** BMC Bioinformatics, Volume 25, Issue 1, Article number 110, December 2024.
ISSN:1471-2105
(**Impact Factor:** 3.0 - SJR: Q1 in Obstetrics and Gynecology)

[J54(2024)] S. Canosa, N. Licheri, L. Bergandi, G. Gennarelli, C. Paschero, M. Beccuti, D. Cimadomo, G. Coticchio, L. Rienzi, C. Benedetto, F. Cordero, A. Revelli. ***A novel machine-learning framework based on early embryo morphokinetics identifies a feature signature associated with blastocyst development.*** Journal of Ovarian Research, Volume 17, Issue 1, Article number 63, December 2024.
ISSN:1757-2215
(**Impact Factor:** 4.0 - SJR: Q1 in Computer Science Applications)

[J53(2024)] M. Arigoni, M.L. Ratto, F. Riccardo, E. Balmas, L. Calogero, F. Cordero, M. Beccuti, R. A. Calogero, L. Alessandri. ***A single cell RNAseq benchmark experiment embedding controlled cancer heterogeneity.*** Scientific data, Volume 11, Issue 1, Pages 1592, Feb. 2024.
ISSN:2052-4463
(**Impact Factor:** 9.8 - SJR: Q1 in Computer Science application)

[J52(2024)] C. Boretto, C. Actis, P. Faris, F. Cordero, M. Beccuti, G. Ferrero, G. Muzio, F. Moccia and R. Autelli. ***Tamoxifen Activates Transcription Factor EB and Triggers Protective Autophagy in Breast Cancer Cells by Inducing Lysosomal Calcium Release: A Gateway to the Onset of Endocrine Resistance.*** Journal of International Journal of Molecular Sciences, Volume 25, Issue 1, Art. 458, Jan. 2024.
ISSN:166-16596
(**Impact Factor:** 5.6 - SJR: Q1 in Computer Science application)

[J50(2023)] E. Amparore, M. Beccuti, P. Castagno, S. Pernice, G. Franceschinis, M. Pennisi. ***From Compositional Petri Net Modeling to***

Macro and Micro Simulation by Means of Stochastic Simulation and Agent-Based Models. ACM Transactions on Modeling and Performance Evaluation of Computing Systems, Volume 9, Issue 125 Oct. 2023.
ISSN:1367-4803
(**Impact Factor:** 0.76 - SJR: Q2 in Computer Science)

[J50(2023)] S. Pernice, A. Maglione,D. Tortarolo, R. Sirovich,M. Clerico, S. Rolla, M. Beccuti, F. Cordero. *A new computational workflow to guide personalized drug therapy.* Journal of Biomedical Informatics, Volume 148, Dec. 2023.
ISSN:1367-4803
(**Impact Factor:** 4.5 - SJR: Q1 in Computer Science application)

[J49(2023)] S. Pernice, Simone,R. Sirovich, E. Grassi, M. Viviani, M. Ferri, F. Sassi, L. Alessandrì, D. Tortarolo, R.A. Calogero, L. Trusolino, A. Bertotti, M. Beccuti, M. Olivero, and F. Cordero. *CONNECTOR, fitting and clustering of longitudinal data to reveal a new risk stratification system* Bioinformatics, Volume 39, Issue 5, May 2023.
ISSN:1367-4803
(**Impact Factor:** 6.931 - SJR: Q1 in Computational Theory and Mathematics)

[J48(2022)] S. Avesani,E. Viesi, L. Alessandrì, G. Motterle, V. Bonnici, M. Beccuti, R. Calogero and R. Giugno. *Stardust: improving spatial transcriptomics data analysis through space-aware modularity optimization-based clustering.* GigaScience, Volume 11, August 2022.
ISSN:2047-217X
(**Impact Factor:** 7.658 - SJR: Q1 in Computer Science Applications)

[J47(2022)] D. Baccega, S Pernice, P. Terna, P. Castagno, G. Moirano, L. Richiardi, M. Sereno, S. Rabellino, M. M. Maule and M. Beccuti. *An Agent-Based Model to Support Infection Control Strategies at School.* Journal of Artificial Societies and Social Simulation (JASS), Volume 25, Issue 3 Article number 2, June 2022.
ISSN: 1460-7425
(**Impact Factor:** 2.222 - SJR: Q1 in Computer Science)

[J46(2021)] L. Alessandri, M. L. Ratto, S.G. Contaldo, M. Beccuti, F. Cordero, M. Arigoni, and R. A. Calogero. *Sparsely connected autoencoders: A multi-purpose tool for single cell omics analysis.* Int. Journal of Molecular Sciences, Volume 22, Issue 23, Article number 12755, December 2021.
ISSN: 0007-1048
(**Impact Factor:** 5.923 - SJR: Q1 in Computer Science Applications)

[J45(2021)] E. Genuardi, G. Romano, M. Beccuti, B. Alessandria, D. Mannina, C. Califano, D. Rota Scalabrini, S. Cortelazzo, M. Ladetto, S. Ferrero, R.A. Calogero, F. Cordero. *Application of the Euro Clonality next-generation sequencing-based marker screening approach to detect immunoglobulin heavy chain rearrangements in mantle cell*

lymphoma patients: first data from the Fondazione Italiana Linfomi MCL0208 trial. British Journal of Haematology, 18 May 2021.
ISSN: 0007-1048
(**Impact Factor:** 5.67 - SJR: Q1 in Hematology)

[J44(2021)] N. Licheri, V. Bonnici, M. Beccuti, R. Giugno. *GRAPES-DD: exploiting decision diagrams for index-driven search in biological graph databases.* BMC Bioinformatics, Volume 22, Issue 1, Article number 209 (2021).
ISSN:1471-2105
(**Impact Factor:** 3.242 - SJR: Q1 in Computer Science Applications)

[J43(2021)] V. Nosi, L. Alessandri, M. Milan, M. Arigoni, S. Benvenuti, D. Cacchiarelli, M. Cesana, S. Riccardo, L. Di Filippo, F. Cordero, M. Beccuti, P. M. Comoglio, R. Calogero. *MET Exon 14 Skipping: A Case Study for the Detection of Genetic Variants in Cancer Driver Genes by Deep Learning.* Int. Journal of Molecular Sciences, Volume 22, Issue 8, Article number 4217 (2021).
ISSN: 1661-6596
(**Impact Factor:** 4.556 - SJR: Q1 in Computer Science Applications)

[J42(2021)] L. Alessandri, F. Cordero, M. Beccuti, N. Licheri, M. Arigoni, M. Olivero, M.F. Di Renzo, A. Sapino, R.A. Calogero. *Sparsely-connected autoencoder (SCA) for single cell RNAseq data mining.* Systems Biology and Applications, Volume 7, Issue 1, Article number: 1 (2021).
ISSN: 2056-7189
(**Impact Factor:** 4.343 - SJR: Q1 in Computer Science Applications)

[J41(2020)] S. Pernice, L. Follia, A. Maglione, M. Pennisi, F. Pappalardo, F. Novelli, M. Clerico, M. Beccuti, F. Cordero, S. Rolla. *Computational modeling of the immune response in multiple sclerosis using epimod framework.* BMC Bioinformatics, Volume 21, Article number: 550 (2020).
ISSN:1471-2105
(**Impact Factor:** 3.242 - SJR: Q1 in Computer Science Applications)

[J40(2020)] S. Pernice, P. Castagno, L. Marcotulli, M. M. Maule, L. Richiardi, G. Moirano, M. Sereno, F. Cordero and M. Beccuti. *Impacts of reopening strategies for COVID-19 epidemic: a modeling study in Piedmont region.* BMC Infectious Diseases, Volume 20, Article number: 798 (2020).
ISSN: 1471-2334
(**Impact Factor:** 2.96 - SJR: Q1 in Infectious Diseases)

[J39(2020)] P. Castagno, S. Pernice, G. Ghetti, M. Povero, L. Pradelli, D. Paolotti, G. Balbo, M. Sereno and M. Beccuti. *A computational frame-*

work for modeling and studying pertussis epidemiology and vaccination. BMC Bioinformatics, Volume 21, 16 September 2020, Page 344.
ISSN:1471-2105
(**Impact Factor:** 3.242 - SJR: Q1 in Computer Science Applications)

[J38(2020)] G. Ferrero, N. Licheri, L.C. Tarrero, C. De Intinis, V. Miano, R.A. Calogero, F. Cordero, M. De Bortoli, and M. Beccuti. *Docker4circ: A framework for the reproducible characterization of circRNAs from RNA-seq data.* International Journal of Molecular Sciences, Volume 21, Issue 1, 1 January 2020, Article number 293.
ISSN:1661-6596
(**Impact Factor:** 4.556 - SJR: Q1 in Computer Science Applications)

[J37(2019)] S. Pernice, M. Pennisi, G. Romano, A. Maglione, S. Cutrupi, F. Pappalardo; G. Balbo; M. Beccuti, F. Cordero and R.A. Calogero. *A computational approach based on the Colored Petri Net formalism for studying Multiple Sclerosis.* BMC Bioinformatics, Volume 20, 10 December 2019, Article number 623

ISSN:1471-2105
(**Impact Factor:** 2.61 - SJR: Q1 in Computer Science Applications)

[J36(2019)] S. Pernice, L. Follia, G. Balbo, L. Milanesi, G. Sartini, N. Totis, P. Lió I. Merelli, F. Cordero and M. Beccuti. *Integrating Petri nets and Flux Balance methods in computational biology models: a methodological and computational practice.* Fundamenta Informaticae, Volume 171, Issue 1-4, 2019, Pages 367-392
ISSN:0169-2968
(**Impact Factor:** 1.298 - SJR: Q3 in Theoretical Computer Science)

[J35(2019)] L. Alessandrì, F. Cordero, M. Beccuti, M. Arigoni, M. Olivero, G. Romano, S. Rabellino, N. Licheri, G. De Libero, L. Pace, R.A. Calogero. *rCASC: reproducible classification analysis of single-cell sequencing data.* Gigascience, Volume 8, Issue 9, September 2019.
ISSN:2047-217X
(**Impact Factor:** 7.267 - SJR: Q1 in Computer Science Applications)

[J34(2019)] L. Follia, G. Ferrero, G. Mandili, M. Beccuti, D. Giordano, R. Spadi, M. A. Satolli, A. Evangelista, H. Katayama, W. Hong, A. A. Momin, M. Capello, S. M. Hanash, F. Novelli and F.Cordero. *Integrative analysis of novel metabolic subtypes in pancreatic cancer fosters new prognostic biomarkers.* Frontiers in Oncology, Volume 9, Issue FEB, Article number 115, 2019,
ISSN:2234-943X
(**Impact Factor:** 4.416 - SJR: Q1 in Oncology)

[J33(2019)] N. Kulkarni, L. Alessandrì, R. Panero, M. Arigoni, M. Olivero, F. Cordero, M. Beccuti and R. A. Calogero. *Reproducible Bioinformatics Project: A community for reproducible bioinformatics analysis pipelines.* BMC Bioinformatics, Volume 19, Issue 10, pages 211-219, October 2018.
(doi:10.1186/s12859-018-2296-x)
ISSN:1471-2105
(**Impact Factor:** 3.114 - SJR: Q1 in Computer Science Applications)

[J32(2018)] L. Coscujuela Tarrero, G. Ferrero, V. Miano, C. De Intinis, L. Ricci, M. Arigoni, F. Riccardo, L. Annaratone, I. Castellano, R.A. Calogero, M. Beccuti, F. Cordero and M. De Bortoli. *Luminal breast cancer specific circular RNAs uncovered by a novel tool for data analysis.* Oncotarget, Volume 9, Issue 18, 2018, Pages 14580-14596, Impact Journals.
ISSN: 1949-2553
(**Impact Factor:** 5.168 - SJR: Q1 in Oncology)

[J31(2018)] P. Mozgunov, M. Beccuti, A. Horvath, T. Jaki, R. Sirovich, E. Bibbona. *A review of the deterministic and diffusion approximations for stochastic chemical reaction networks.* Reaction Kinetics, Mechanisms and Catalysis, Volume 123, Issue 2, 1 April 2018, Pages 289-312, Springer Press.
ISSN: 1878-5190
(**Impact Factor:** 1.264 SJR: Q3 in Physical and Theoretical Chemistry)

[J30(2018)] M. Beccuti, F. Cordero, M. Arigoni, R. Panero, E. G. Amparore, S. Donatelli and R. A. Calogero *SeqBox: RNAseq/ChIPseq reproducible analysis on a consumer game computer.* Bioinformatics, Volume 34, Issue 5, 1 March 2018, Pages 871-872. Oxford University Press.
ISSN:1367-4803
(**Impact Factor:** 7.307 - SJR: Q1 in Computational Theory and Mathematics)

[J29(2017)] M. Beccuti, E. Genuardi, G. Romano, L. Monitillo, D. Barbero, M. Boccadoro, M. Ladetto, R. A. Calogero, S. Ferrero and F. Cordero. *HashClone: a new tool to quantify the minimal residual disease in B-cell lymphoma from deep sequencing data.* BMC Bioinformatics, Volume 18, Issue 1, 23 November 2017.
(doi:10.1186/s12859-017-1923-2)
ISSN:1471-2105
(**Impact Factor:** 3.450 - SJR: Q1 in Computer Science Applications)

[J28(2017)] G. Ferrero, V. Miano, M. Beccuti, G. Balbo, M. De Bortoli, and F. Cordero. *Dissecting the genomic activity of a transcriptional regulator by the integrative analysis of omics data.* Scientific Reports, Volume 7, Article number: 8564 (2017), Nature Publishing Group.
(doi:10.1038/s41598-017-08754-9)

ISSN: 2045-2322
(**Impact Factor:** 4.847 - SJR: Q1 in Multidisciplinary)

[J27(2017)] F. Martina, M. Beccuti, G. Balbo, F. Cordero. ***Peculiar Genes Selection: A new features selection method to improve classification performances in imbalanced data sets.*** PLOS ONE 12(8):e0177475. Public Library of Science, Aug. 2017.
(doi:10.1371/journal.pone.0177475)
ISSN:1932-6203
(**Impact Factor:** 2.806 - SJR: Q1 in Biochemistry, Genetics and Molecular Biology)

[J26(2017)] N. Totis, L. Follia, F. Cordero, C. Riganti, F. Novelli, G. Balbo and M. Beccuti. ***Overcoming the lack of kinetic information in biochemical reactions networks.*** Performance Evaluation Review, Volume 44(4) Pages 91-102, 2017. ACM New York, NY, USA.
ISSN:0163-5999
(SJR: Q2 in Software)

[J25(2016)] E. G. Amparore, G. Balbo, M. Beccuti, S. Donatelli and G. Franceschinis. ***30 years of GreatSPN.*** Ed. Springer Series in Reliability Engineering, Editors Lance Fiondella and Antonio Puliafito, 2016. ISBN-13:978-3319305974
ISSN:1614-7839
(SJR: Q4 in Safety, Risk, Reliability and Quality)

[J24(2016)] P. Catarsi , F. Cordero, G. Ferrero, M. Beccuti, V. Poletto, E. Bonetti, L. Villani, M. Massa, G. Fois, R. Campanelli, U. Magrini, V. Rosti, G. Barosi. ***Deregulated Genes in Hematopoietic Stem Cells Isolated from Spleen of Patients with Myelofibrosis.*** Blood, 128(22), 4279. 2016. (Extended abstract.)
ISSN: 0006-4971
(**Impact Factor:** 11.841 - SJR: Q1 in Immunology)

[J23(2016)] G. Miglio, A. D. Sabatino, E. Veglia, M. T. Giraudo, M. Beccuti, F. Cordero. ***A computational analysis of S-(2-succino)cysteine sites in proteins.*** Biochimica et Biophysica Acta - Proteins and Proteomics, Elsevier Press., volume 1864(2), 2016
ISSN:1570-9639
(**Impact Factor:** 3.127 - SJR: Q1 in Biophysics)

[J22(2015)] M. Munoz-Amatriain, S. Lonardi, M. Luo, . . ., M. Beccuti et al. ***Sequencing of 15,622 gene-bearing BACs clarifies the gene-dense regions of the barley genome.*** Plant Journal, Ed. Wiley-Blackwell, volume 84(1), 2015, Pages 216-227.
ISSN:0960-7412

(**Impact Factor:** 5.972 - SJR: Q1 in Cell Biology)
ISI Journal Citation Reports Ranking: 2014: 10/200 (Plant Sciences).

[J21(2015)] A. Angius, G. Balbo, M. Beccuti, E. Bibbona, A. Horvath, R. Sirovich. ***Approximate analysis of biological systems by hybrid switching jump diffusion.*** Theoretical Computer Science, Elsevier Press., volume 587, July 04, 2015, Pages 49-72
ISSN:0304-3975
(**Impact Factor:** 0.657 - SJR: Q1 in Computer Science)

[J20(2015)] C. Fornari, G. Balbo, S.M. Halawani, O. Ba-Rukab, A.R. Ahmad, R. A. Calogero, F. Cordero and M. Beccuti. ***A versatile mathematical work-flow to explore how Cancer Stem Cell fate influences tumor progression.*** BMC Systems Biology, Volume 9, Issue 3:S1, June 2015.
ISSN:1752-0509
(**Impact Factor:** 2.44 - SJR: Q1 in Modelling and Simulation)

[J19(2015)] M. Carrara, J. Lum, F. Cordero, M. Beccuti, S. Donatelli, R.A. Calogero, F. Zolezzi. ***Alternative splicing detection workflow needs a careful combination of sample prep and bioinformatics analysis.*** BMC Bioinformatics, Volume 16, Issue 9:S2, June 2015.
ISSN:1471-2105
(**Impact Factor:** 2.58 - SJR: Q1 in Computer Science Applications)

[J18(2015)] E. Medico, M. Russo, G. Picco, C. Cancelliere, E. Valtorta, G. Corti, M. Buscarino, C. Isella, S. Lamba, B. Martinoglio, S. Veronese, S. Siena, A. Sarote-Bianchi, M. Beccuti, M. Mottolese, M. Linnebacher, F. Cordero, F. Di Nicolantonio, A. Bardelli. ***The molecular landscape of colorectal cancer cell lines unveils clinically actionable targets.*** Nature Communications, Volume 6, Article number 7002, April 2015.
ISSN:2041-1723
(**Impact Factor:** 10.742 - SJR: Q1 in Biochemistry, Genetics and Molecular Biology)

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[B2(2014)] M. Beccuti, S. Chiaradonna, F. Di Giandomenico, S. Donatelli, G. Dondossola, G. Franceschinis. ***Model-based evaluation of the impact of attacks to the telecommunication service of the electrical grid.*** Chapter 14 in book *Cyber Behavior: Concepts, Methodologies, Tools, and Applications.* Editors Bologna S. and Theron P., Ed. IGI Global. 2014.
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[B1(2013)] M. Beccuti, S. Chiaradonna, F. Di Giandomenico, S. Donatelli, G. Dondossola, G. Franceschinis. ***A model based approach for the evaluation of cyber attacks to the electrical grid.*** Chapter 14 in book *Model-Based Evaluation of the Impact of Attacks to the Telecommunication Service of the Electrical Grid.* Editors Sandro Bologna and Paul Theron. Ed. IGI Global. 2013.
ISBN:578-1-4666-2964-6

Participation in committees

- Program Committee member of the International Workshop on New Frontiers in Quantitative Methods in Informatics (InfQ2016), Taormina, Italy, October 24-25,2016.

- Program Committee member of the International Workshop on New Frontiers in Quantitative Methods in Informatics (InfQ2017), Venezia, Italy, December 5-7,2017.

- Program Committee member of the International Workshop on New Frontiers in Quantitative Methods in Informatics (InfQ2018), Milano, Italy, October 24-25,2018.

- Program Committee member of the 2nd International Workshop on Sustainable Data Centers and Cloud Computing (SD3C'16), Shanghai, China. December 6-9, 2016.

- Program Committee member of the 34th International Conference on Application and Theory of Petri Nets and Concurrency, Milano, Italy. June 25-29, 2013.

- Program Committee member of the 35th International Conference on Application and Theory of Petri Nets and Concurrency, Tunis, Tunisia, June 23-27, 2014.

- Program Committee member of the 36th International Conference on Application and Theory of Petri Nets and Concurrency, Belgium, Brussels, June 21-26, 2015.

- Tool Board member of the Model Checking Contest at International Conference on Application and Theory of Petri Nets and Concurrency, Tunis, Tunisia, June 24 2014.

- Tool Board member of the Model Checking Contest at International Conference on Application and Theory of Petri Nets and Concurrency, Belgium, Brussels, June 24 2015.

- Tool Board member of the Model Checking Contest at International Conference on Application and Theory of Petri Nets and Concurrency, Torun, Poland, June 21 2016.

- Tool Board member of the Model Checking Contest at International Conference on Application and Theory of Petri Nets and Concurrency, Zaragoza, Spain, June 27 2017.

- Organizing Committee member of the 22nd International Conference on Parallel Distributed network-based Processing (PDP14), Torino, Italy, 12-14 February 2014.

- Program Committee member of the Special Session on *Advances in High-Performance Bioinformatics, Systems and Synthetic Biology* in the 23rd International Conference on Parallel Distributed network-based Processing (PDP15), Turku, Finland, March 4-6 , 2015.

- Program Committee member of the Special Session on *Advances in High-Performance Bioinformatics, Systems and Synthetic Biology* in the 25th International Conference on Parallel Distributed network-based Processing (PDP17), St. Petersburg, Russia, March 6-8, 2017.

- Program Committee member of the Special Session on *High Performance Computing in Modelling and Simulation* in the 26th International Conference on Parallel Distributed network-based Processing (PDP18), Cambridge, UK, 6-8 March 2018.

- Program Committee member of the Special Session on *High Performance Computing in Modelling and Simulation* in the 27th International Conference on Parallel Distributed network-based Processing (PDP19), Pavia, Italy, 13-15 February 2019.

- Program Committee member of the Special Session on *High Performance Computing in Modelling and Simulation* in the 28th International Conference on Parallel Distributed network-based Processing (PDP20), Vasteras, Sweden, 11-13 March 2020.

- Program Committee member of the Special Session on *High Performance Computing in Modelling and Simulation* in the 30th International Conference on Parallel Distributed network-based Processing (PDP22), Vallodolid, Spain 9-11 March 2022.

- Program Committee member of the Special Session on *High Performance Computing in Modelling and Simulation* in the 31st International Conference on Parallel Distributed network-based Processing (PDP23), Naples, Italy 1-3 March 2023.

- Publicity chair of 4th international workshop on Data Center Performance (DCPerf 2014), Madrid, Spain, June 30 - July 3, 2014.

- Program Committee member of the 4th International workshop on Data Center Performance (DCPerf'14), Madrid, Spain, June 30 - July 3, 2014.

- Organizing Committee member of the 32nd International Symposium on Computer Performance, Modelling, Measurements and Evaluation (Performance'14), Torino, Italy, 7-9 October, 2014.

- Program Committee member of the 6th International Workshop on Biological Processes & Petri Nets (BioPPN'15), Brussels, Belgium 21-26 June, 2015.

- Program Committee member of the 7th International Workshop on Biological Processes & Petri Nets (BioPPN'16), Torun, Poland, 19-24 June, 2016.

- Program Committee member of the 7th International Conference on Data Communication Networking (DCNET'16), Lisbon, Portugal, June 26-28, 2016.

- Program Committee member of the 8th International Conference on Data Communication Networking (DCNET'17), Madrid, Spain, June 24-26, 2017.

- Program Committee member of the 9th International Conference on Data Communication Networking (DCNET'18), Porto, Portugal, June 26-28, 2018.

- Program Committee member of the 11th International Conference on Data Communication Networking (DCNET'20), Paris, France, 08-10 Jul 2020.

- Program Committee member of 15th European Performance Engineering Workshop (EPEW'18), Paris, France , October 29-30 2018.

- Program Committee member of 16th European Performance Engineering Workshop (EPEW'19), Milan, Italy, November 28-29, 2019.

- Program Committee member of 17th European Performance Engineering Workshop (EPEW'21), Tsukuba,Japan, December 9-14, 2021.

- Program Committee member of 18th European Performance Engineering Workshop (EPEW'22), Santa Pola, Spain, September 21-23, 2022.

- Program Committee member of 2nd International Workshop on Computational Methods for the Immune System Function (CMISF'18), Madrid, Spain, December 3-6 2018.

- Program Committee member of 16th International Conference on Computational Intelligence methods for Bioinformatics and Biostatistics (CIBB'19), Bergamo, Italy, September 4-6 2019.

- Program Committee member of 17th International Conference on Computational Intelligence methods for Bioinformatics and Biostatistics (CIBB'21), November 15-17 2019.

- Program Committee member of 16th Annual Meeting of the Bioinformatics Italian Society, June 26-28, 2019, Palermo, Italy

- Reviewer board member of International Journal of Artificial Intelligence, Neural Networks, and Complex Problem-Solving Technologies: Applied Intelligence. E.d. Springer (From 2012 To 2018).
  (**Impact Factor:**1.853)

- Program Committee member of 12th ACM/SPEC International Conference on Performance Engineering (ICPE'21),Rennes, France, April 17-23, 2021.

- Editorial Board of Frontiers in Bioinformatics. E.d.Frontiers (From 2020 to now).

Organization of Conferences, workshops, special sections:

- Co-chair of Workshop on *Multi-Omics Data Integration for Modelling Biological Systems* in the 30th ACM International Conference on Information and Knowledge Management (CIKM2021), Queensland, Australia, 1-5 November 2021, ISBN 978-1-4503-8446-9.

- Co-chair of Workshop on *Multi-Omics Data Integration for Modelling Biological Systems* in the 32nd ACM International Conference on Information and Knowledge Management (CIKM2021), Birmingham, UK, 21-25 November 2023, ISBN 978-1-4503-8446-9.

- Co-chair of the Special Session on *Modeling and Simulation Methods for Computational Biology and System Medicine* in the 16th International Computational Intelligence methods for Bioinformatics and Biostatistics (CIBB2019), Bergamo, Italy, 6-8 September 2019, Springer 2020, ISBN 978-3-030-63060-7.

- Co-chair of the Special Session on *Modeling and Simulation Methods for Computational Biology and System Medicine* in the 18th International Computational Intelligence methods for Bioinformatics and Biostatistics (CIBB2023), Padova, Italy, 4-6 September 2023, Springer 2023.

- Co-chair of workshop *Advances in High-Performance Bioinformatics, Systems Biology* in the 24th International European Conference on Parallel and Distributed Computing (Euro-Par2018), Turin, Italy, 27-31 August, 2018, ISBN 978-3-319-96982-4.

- General workshop Co-chair in the annual meeting of the Bioinformatics Italian Society (BITS2018), Turin, Italy, June 27-29, 2018.

- Workshop Co-chair of *Exploiting Docker for reproducibility in bioinformatics analysis* workshop in the annual meeting of the Bioinformatics Italian Society (BITS2018), Turin, Italy, June 27-29, 2018.

- Co-organizer of the national workshop *First Piedmont Bioinformatic Day*, Turin, Italy, 22 September 2016.

- Co-chair of the Special Session on *Advances in High-Performance Bioinformatics, Systems and Synthetic Biology* in the 22nd EuroMicro International Conference on Parallel Distributed network-based Processing (PDP14), Torino, Italy, 12-14 February 2014, IEEE 2014, ISBN 978-1-4799-2729-6

- Co-chair of the Special Session on *Advances in High-Performance Bioinformatics, Systems and Synthetic Biology* in the 26th EuroMicro International Conference on Parallel Distributed network-based Processing (PDP18), Cambridge, UK, 6-8 March 2018, IEEE 2018, ISBN 978-1-5386-4975-6

- Co-chair of the Special Session on *Advances in High-Performance Bioinformatics, Systems and Synthetic Biology* in the 27th EuroMicro International Conference on Parallel Distributed network-based Processing (PDP19), Pavia, Italy, 13-15 February 2019, IEEE 2019 ISBN 978-1-7281-1644-0.

- Co-chair of the Special Session on *Advances in High-Performance Bioinformatics, Systems and Synthetic Biology* in the 28th EuroMicro International Conference on Parallel Distributed network-based Processing (PDP20), Vasteras, Sweden, 11-13 March 2020, IEEE 2020, ISBN 978-1-7281-6582-0.

- Co-chair of the Special Session on *Advances in High-Performance Bioinformatics and Biomedicine* in the 29th EuroMicro International Conference on Parallel Distributed network-based Processing (PDP21), Vallodolid, Spain 10-12 March 2021, IEEE 2021, ISBN 978-1-6654-1455-5

- Co-chair of the Special Session on *Modelling and Simulation of Large Complex Systems* in the 16th IEEE International Conference on Scalable Computing and Communications (ScalCom16), Toulouse, France, 18-21 July 2016, IEEE Computer Society, ISBN 978-1-5090-2771-2.

- Co-organizer of a PhD School for the National PhD in Artificial Intelligence - Health and life sciences area, September 26-30, 2022 - Univ. Campus Bio-Medico di Roma.

Instructor in International Tutorials and Workshops

- Instructor at IEEE Winter School on Imaging Genetics, November 26-29, 2019 Verona. (`http://igs.di.univr.it/`)

- Instructor of the course *RNA-seq analysis* in the RNA-seq Workshop, Dept. Clinical and Biological Sciences, Molecular Biotechnology Center, Torino, Italy, April 2013.

- Instructor of the course *advanced RNA-seq analysis* in the RNA-seq Workshop, Dept. Clinical and Biological Sciences, Molecular Biotechnology Center, Torino, Italy, April 2014.

- Instructor of the course *advanced NGS data analysis* in Jagiellonian University Medical College, Faculty of Medicine, Krakow, Poland, November 2014.

- Instructor of the course *advanced NGS data analysis* in University of Turin, Dept. Clinical and Biological Sciences, Turin, Italy.
  Dates: (1)April 2015; (2)April 2016 (3)April 2017; (4) 26-30 March 2018; (4) 25-29 March 2019.

- Instructor of the course *Whole Transcriptome Data Analysis* in European Molecular Biology Laboratory (EMBL), Heidelberg , Germany.
  Dates: (1)28 June-1 July 2016; (2)3-7 October 2016; (3)5-9 June 2017; (4)3-6 October 2017; (5)4-8 June 2018; (6)7-11 October 2018;

- Scientific Organizer and Instructor of the course *Whole Transcriptome Data Analysis* in European Molecular Biology Laboratory (EMBL), Heidelberg, Germany.
  Dates: (1)3-7 June 2019; (2)30 September - 4 October 2019; (3)29 May - 3 Jun 2022; (4)21 May -27 May 2023.

- Instructor of EMBO Practical Course: Single-cell omics: deeper to genomics in European Molecular Biology Laboratory (EMBL), Heidelberg, Germany, , Heidelberg, Germany.
  Dates: (1)13-18 November 2022;

- Organizer and instructor of the Elixir course *Docker and reproducibility* in Molecular Biotechnology Center, Turin, Italy, 13-14 June 2019.

- Organizer of the EOSC-Life course *An Open Science approach for Microbiology data integration (OSA2Micro)* in Molecular Biotechnology Center, Turin, Italy, 3-5 July 2023.

- Instructor of the course *RNA sequencing* in Fondazione Istituto Italiano di Tecnologia (IIT), Genova, Italy, 5-9 February 2018.

- Instructor of the course *Transcriptome Data Analysis* for the Doctoral School in Life and Health Sciences at University of Verona, Verona, Italy, 4-6 September 2017.

- Instructor of the course *Advanced Statistics: Machine Learning* for the Doctoral School in Systems Medicine at European School of Molecular Medicine (SEEM) , Milan, Ital: Dates: (1)10 March 2021, (2)24 March 2022, (3)20 July 2023.

Editorial of articles

- LNCS series: ***Euro-Par 2018: Parallel Processing Workshops***. Int. Workshops Euro-Par 2018, Turin, Italy, August 27-28, 2018, Revised Selected Papers. Editors: G. Mencagli, D. B. Heras, V. Cardellini, E. Casal-

icchio, E. Jeannot, F. Wolf, A. Salis, C. Schifanella, R. R. Manumachu, L. Ricci, M. Beccuti, L. Antonelli, J. D. G. Sánchez, S. L. Scott.s

Honors and awards

- Invited to Schloss Dagstuhl in Wadern, Germany. Dagstuhl Seminar *14481 Multiscale Spatial Computational Systems Biology*, 24-28 November, 2014.

- Article "*A physical, genetic and functional sequence assembly of the barley genome*" is recognized by Web of Science as a Highly Cited Paper, top 1% in Molecular Biology and Genetics for the publication Nature;

- Article "*Quantification of dependencies between electrical and information infrastructures*" is recognized by ScienceDirect as one of the Top downloaded 25 papers published in International Journal of Critical Infrastructure Protection (Ed. Elsevier) in 2012;

- Article "*Quantification of dependencies between electrical and information infrastructures*" is one of the most cited International Journal of Critical Infrastructure Protection Articles since 2009 (extracted from Scopus).

- Committee member of Doctoral School of Sciences and Innovative Technologies (in Computer science), University of Turin, from 2016.

- Invite scientist for the workshop *RNA sequencing*, 5-9 February 2018, Fondazione Istituto Italiano di Tecnologia (IIT), Genova.

Invited speakers/lectures

- **Invited speaker**: *Computational Reproducibility in the Life Sciences*. In the 18th International Computational Intelligence methods for Bioinformatics and Biostatistics (CIBB2023), Padova, Italy, 4-6 September 2023, Springer 2023.

- **Invited speaker**: *SeqMDD: exhaustive sequence mapping exploiting symbolic data structure*. In Workshop on Massive Parallel Sequencing. Molecular Biotechnology center, Torino, Italy. 8 March 2011.

- **Invited speaker**: Mathematical models on cancer progression. In 5th International Workshop on Biological Processes & Petri Nets (BioPPN 2014) Tunis,Tunisia, 23 June 2014.

- **Invited lecture**: *State-of-the-Art Fusion-Finder Algorithms: sensitivity and specificity*. In Omicron European FP7 project, Jagiellonian University Medical College, Faculty of Medicine, Krakow, Poland, November 2014.

- **Invited lecture**: *Decision Diagrams to Encode and Manipulate Large Structured Data* at Faculty of Computing in University of King Abdulaziz Rabid, Saudi Arabia, 28 January, 2013.

- **Invited lecture**: *Modelling and Simulation of Biological Systems* at Computer, Electrical and Mathematical Science and Engineering Division of King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia, 30 January, 2013.

- **Invited lecture**: *Whole Transcriptome Data Analysis.* In European Molecular Biology Laboratory, Heidelberg, Germany, 28 June-1 July, 2016.

- **Invited lecture**: *Mathematical models on Systems Biology.* In IBM Research, Zurich, Switzerland 24 May 2017.

- **Invited lecture**: *Precision medicine: from deep sequencing data to mathematical models.* In Department of Biotechnology at Universita' degli Studi di Verona. September 2015.

- **Invited lecture**: *Analysis of biological systems by hybrid switching jump diffusion.* In Department of Computer Science at Univ. of Pisa. March 2018.

Participation in research projects

Principal Investigator

Project title: Creation of a computational framework to model and study West Nile Disease (supported by CRT foundation).
Start date of the project: 03/02/2020
Duration: 24 months
This project aims will be the development of a new computational framework for the study of West Nile Disease which provides new tools for the evaluation, prevention and control of this disease. The novelties and strengths of such framework will be: (1) the use of a graphical formalism based on Petri Nets to simplify the model creation and to provide an intuitive description of the system behaviour; (2) the implementation of an R package to provide a user-friendly interface; (3) the containerization (into Docker images) of all the implemented analysis techniques to improve the framework portability and to ensure the reproducibility of the derived results; (4) The definition of a well-defined schema and related infrastructure to allow users to integrate their own analysis workflows in the framework.

Project title: Experimentation and study of models for the evaluation of the performance and the energy efficiency for the Competence Center for Scientific Computing at the University of Turin (supported by CRT foundation).
Start date of the project: 13/03/2017
Duration: 24 months
This project aims to study the performance of the new Scientific Computing center (C3S) of the University of Turin through measurement campaigns and suitable formal models, creating a series of ad-tools hoc with

which to analyze and develop strategies to enable load distribution to increase performance and reliability while reducing operating costs and the impact environmental. A distinctive feature of this project will be the creation and calibration of the model through the experimental data obtained by the realization of a measurement and monitoring infrastructure for C3S.

Unit leader

Project title: TrustAlert (call for Artificial Intelligence in Healthcare - Fondazione Compagnia di San Paolo)
Start date of the project: 2023
Duration: 36 months
The goal of the project TrustAlert is to advance preparedness and response capabilities of territorial public health agencies to emergencies. To achieve this goal, the project aims to establish a comprehensive, integrated platform, to provide early warnings, monitoring and forecasting tools to public health response agencies and local healthcare services for anticipating medical needs.
(Total cost 1M Euro)

Project title: EUMaster4HPC- EU Master in High Performance Computing (EC H2020 RIA, EuroHPC-2020-03) *Start date of the project:* 2022
Duration: 36 months
The HPC European Consortium Leading Education Activities (EUMaster4HPC) aims to develop a new and innovative European Master programme focusing on high performance solutions to address these issues. The master programme aims at catalysing various aspects of the HPC ecosystem and its applications into different scientific and industrial domains.
(Total cost 7M Euro, G.A. 101051997)

Project title: The resilience of the Mediterranean sea to directional climate change: development of experimental and risk models to evaluate the resistance mechanism of different marine organisms (Ministero della Salute - Ricerca Corrente 2022).

Start date of the project: 2023
Duration: 24 months
The present project, studying the adaptive molecular mechanisms implemented by various marine species in response to climate change, aims to identify and characterize new biomarkers to evaluate, monitor and predict the impact of abiotic stressful environmental factors on the pathophysiology of different marine organisms both at to develop possible safeguard strategies and to evaluate their economic impact. In particular, they will be: (1) Characterized the main pathogenetic mechanisms associated with global warming in marine mammals and turtles stranded on the coasts of the Mediterranean Sea; (2)Created in vivo and in vitro experimental computational models to study the effect of water temperature, acidity, and salinity variations on the molecular mechanisms of resistance adopted

by marine organisms and on protein misfolding; (3) Developed predictive computational models of ecological risk in the Mediterranean region.
(Total cost 100K Euro)

WP leader

Project title: SUS-MIRRI.IT Strengthening the MIRRI Italian Research Infrastructure for Sustainable Bioscience and Bioeconomy (PNRR IR)
Start date of the project: 2022
Duration: 36 months
The project aim is strengthen the national network of biobanks of microorganisms (viruses, bacteria, yeasts, filamentous fungi and microalgae) to preserve and valorize microbial biodiversity by providing effective tools to face major social, economic and environmental challenges.
(Total cost 17M Euro, G.A. 101051997)

Task leader

Project title: MICROBES-4-CLIMATE - Microbial services addressing climate change risks for biodiversity and for agricultural and forestry ecosystems: enabling curiosity-driven research and advancing frontier knowledge (HORIZON-INFRA-2023-SERV-01-02)
Start date of the project: 2024
Duration: 36 months
It is a groundbreaking project funded by Horizon Europe, with a mission to address climate change risks for biodiversity, agricultural, and forestry ecosystems. The project aims to facilitate curiosity-driven research and advance frontier knowledge by providing a wider community of users and researchers with access to world-class Research Infrastructures and integrated, advanced services.
(Total cost 16M Euro)

Thematic Research Group Leader

Project title: High Performance Modelling and Simulation for Big Data application (cHIPSet - COST Action n. IC1406).
Start date of the project: 08/04/2015
Duration: 36 months
The Action will share best practices and research on novel data-aware programming models for parallel computing with a specific focus on simulation workloads. A key goal of the activity is to support both code and performance portability across different HPC platforms for problems requiring the management of massive data.

Researcher

Project title: Holistic Human Factors and System Design of Adaptive Cooperative Human-Machine Systems(European ARTEMIS-2012ASP8).
Start date of the project: 01/10/2013
Duration: 36 months
HOLIDES addresses the development and qualification of Adaptive Cooperative Human-Machine Systems (AdCoS) that are urgently needed to

enhance usability and safety as well as to boost the confidence of human operators. HOLIDES will therefore develop a Human Factors Reference Technology Platform (HF-RTP) to foster interoperability and to support human factors along the whole engineering lifecycle.

Project title: Parallel Patterns for Adaptive Heterogeneous Multicore Systems (European FP7- 288570).
Start date of the project: 01/10/2011
Duration: 36 months
ParaPhrase project aims to produce a new structured design and implementation process for heterogeneous parallel architectures, where developers exploit a variety of parallel patterns to develop component based applications that can be mapped to the available hardware resources, and which may then be dynamically re-mapped to meet application needs and hardware availability.

Project title: Advanced Methodologies for the Analysis and management of the Future Internet (supported by Compagnia di San Paolo foundation).
Start date of the project: 01/01/2012
Duration: 36 months
http://amalfi.di.unito.it/index.html
The goal of the project is to extend and improve existing mathematical methods (based on stochastic processes, diffusion approximations, decomposition, aggregation, copulas, temporal logics, game theory, compressive sensing, network coding) to develop advanced frameworks, methodologies and tools for approaching the analysis and management of novel architectures proposed for "Future Internet" (FI). Our methodologies, designed to address the very large scale and complex models deriving from these architectures and validated by realistic simulations, will help to select, configure and manage services and applications paving the way to FI.

Project title: Advancing the Barley Genome (CRIS NUMBER: 0218967).
Start date of the project: 01/09/2009
Duration: 36 months
http://www.reeis.usda.gov/web/crisprojectpages/218967.html
The goal of this new project, through accomplishment of short-term gene sequencing and physical map-related goals, is to further facilitate marker-assisted breeding by greatly improving access to knowledge of barley genes. As a corollary, the information developed from this project also will accelerate map-based cloning efforts, which also lead to improved markers as well as alter.

Project title: Wireless Sensor Networks for Dependable Monitoring of Critical Applications (MIUR-PRIN).
Start date of the project: 01/10/2008
Duration: 24 months
The project aims to investigate innovative solutions for the application of WSN networks to the realization of monitoring systems for safety critical applications. This objective is pursued by means of the integration of two complementary research lines: a technological line aimed to develop solu-

tions for the efficient management of the network resources and to increase its quality of service and lifetime; a methodological line aimed to develop modelling and quantitative evaluation techniques that make the reliability figures predictable and support efficient management strategies.

Project title: Performance Evaluation of Complex System: Techniques, Methodologies and Tools (MIUR-FIRB).
Start date of the project: 01/11/2006
Duration: 36 months
This Project focuses on the foundations of performance evaluation with the aim of developing new techniques, methodologies and tools for the analysis of the complex systems driving the Information Society. The topics addressed within the Project encompass all the aspects of performance evaluation, from measurement and characterization techniques, to formalisms for the qualitative and quantitative modeling of complex systems, to solution methods for analytical, numerical and simulation models.

Project title: CRitical UTility InfrastructurAL resilience (European IST research project 2006-2009).
Start date of the project: 01/01/2006
Duration: 39 months
This project is an European IST research project approved from the EU within the Sixth Framework Program (FP6). The project addresses new networked ICT system for the management of the electric power grid, in which artefacts controlling the physical process of electricity transportation need to be connected with information infrastructures, through corporate networks, which are in turn connected to the Internet.