

SERGIO CONSOLI

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Personal

- **Birthday:** 16th May 1979
- **Place of birth:** Catania (Sicily, Italy)
- **Nationality:** Italian
- **Relationship Status:** married

Education

- **Brunel University**—West London, United Kingdom
October 2005 – December 2008
 - Ph.D. in *Operational Research*, supported by a full European Marie Curie bursary (www.mariecurie.org)
 - involved in the European Union project NET-ACE (*Network Theory & Applications to Computing and Engineering*)
 - involved in the interdisciplinary research group CARISMA (*Centre for the Analysis of Risk and Optimization Modeling Applications*)
 - Ph.D. degree awarded on the 26th November 2008
- **University of Catania**—Sicily, Italy
October 1998 – April 2005
 - Master's (M.Sc.) degree in *Computer Engineering* with specialization in *Industrial Automation and Control Technologies*
 - Final mark **110/110 cum laude**
- **Istituto Tecnico Industriale Statale Guglielmo Marconi**—Sicily, Italy
September 1993 – June 1998
 - High School *Diploma of Expert in Electronics and Telecommunications*
 - Final mark **60/60**

Languages

- **Italian:** mother tongue
- **English:** fluent, both written and spoken (BrunELT certificate)
- **Spanish:** fair

Research Area

- Computer Science, Operational Research, Artificial Intelligence
- Numerical algorithms and mathematical programming methods
- Metaheuristics (Genetic Algorithms, Ant Colony Optimization, Particle Swarm Optimization, Memetic Algorithms, Variable Neighbourhood Search, Tabu Search, Simulated Annealing, Scatter Search, . . .) in Combinatorial and Continue Optimization: application to real problems
- Robust network optimization and sensitivity analysis: models and algorithms
- Multi-objective network modelling and algorithms
- Network problems, with special emphasis for Location, Transportation, and Path-finding problems
- Data Mining and Clustering methods

- Neural Networks and Cellular Neural Networks
- Field Programmable Gate Arrays (FPGA)
- Humanitarian crisis management software: crisis monitoring systems and response technologies

Work Experience

- **European Commission, Joint Research Centre (JRC)**—Ispra, Varese, Italy
September 2011 – Present
 - Postdoctoral Researcher on evaluation and development of crisis management system software within the CRITECH (Crisis Monitoring and Response Technologies) Action, Global Security and Crisis Management Unit, at the Institute for the Protection and Security of the Citizen
- **Fincons Group S.p.A.**—Sicily, Italy
July 2010 – September 2011
 - Senior Programmer - IT consultant at Isab S.r.l. refinery by ERG and Lukoil oil companies (Windows, .Net framework (mainly C++, VB, C#), SQL Server)
- **R&D and software development divisions, Softeco Sismat S.p.A.**—Genoa, Italy
March 2009 – March 2010
 - Software developer within the "Sistema Informativo Movimentazione" project at Isab S.r.l. refinery by ERG and Lukoil (SQL Server and .Net framework)
- **Media Interaction Group, Philips Research**—Eindhoven, The Netherlands
May 2007 – March 2008
 - Research project: Comparison of metaheuristics for the quartet method of hierarchical clustering
- **Engineering and Computation Department, Universidad De La Laguna**—Tenerife, Spain
May 2006 – October 2006
 - Research project: Exploration of metaheuristics for labelling tree network problems
- **Automation Group, STMicroelectronics**—Sicily, Italy
September 2004 – April 2005
 - Project of a digital interface based on Field Programmable Gate Arrays for the ACE16K chips
- **Department of Systems, Electrical and Electronic Engineering, University of Catania**—Sicily, Italy
February 2003 – June 2003
 - Student tutor of the Electronics laboratories

Papers presented at International Conferences

- 13th–18th July 2008: *International Federation of Operational Research Societies Conference (IFORS)* – Johannesburg, South Africa
- 8th–10th November 2007: The workshop on *Nature Inspired Cooperative Strategies for Optimization (NICSO)* – Sicily, Italy
- 4th–7th November 2007: *INFORMS annual meeting* – Seattle, United States
- 8th–11th July 2007: Chairman of the session on Metaheuristics of the 22th *European Conference on Operational Research (EURO)* – Prague, Czech Republic
- 24th–26th May 2007: The 20th Anniversary Conference of the *European Chapter on Combinatorial Optimization (ECCO)* – Limassol, Cyprus
- 14th–16th February 2007: *V Congreso Español sobre Metaheurísticas, Algoritmos Evolutivos y Bioinspirados (MAEB)* – Tenerife, Spain

Selected Referred Papers and Book Chapters

- **Published:**

- S. Consoli, K. Darby-Dowman, G. Geleijnse, J. Korst, and S. Pauws, 2010. Heuristic approaches for the quartet method of hierarchical clustering. *IEEE Transactions on Knowledge and Data Engineering*, 22(10):1428-1443, <http://doi.ieeecomputersociety.org/10.1109/TKDE.2009.188>
- S. Consoli, K. Darby-Dowman, N. Mladenović, and J. A. Moreno-Pérez, 2009. Greedy randomized adaptive search and variable neighbourhood search for the minimum labelling spanning tree problem. *European Journal of Operational Research*, 196(2):440-449, doi:10.1016/j.ejor.2008.03.014
- S. Consoli, K. Darby-Dowman, N. Mladenović, and J. A. Moreno-Pérez, 2009. Variable neighbourhood search for the minimum labelling Steiner tree problem. *Annals of Operations Research*, 172(1):71-96, doi:10.1007/s10479-008-0507-y
- S. Consoli, J. A. Moreno-Pérez, K. Darby-Dowman, and N. Mladenović, 2010. Discrete particle swarm optimization for the minimum labelling Steiner tree problem. *Natural Computing*, 9(1):29-46, doi:10.1007/s11047-009-9137-9
- S. Consoli, J. A. Moreno-Pérez, K. Darby-Dowman, and N. Mladenović, 2008. Discrete particle swarm optimization for the minimum labelling Steiner tree problem. In N. Krasnogor, G. Nicosia, M. Pavone, and D. Pelta, editors, *Nature Inspired Cooperative Strategies for Optimization*, volume 129 of *Studies in Computational Intelligence*, pages 313-322. Springer-Verlag, New York

Computer Skills

- **Operating Systems:**

- Windows 98/2000/XP/VISTA, Mac OS 9 and X, Linux and UNIX (several variants)

- **Tools and Systems:**

- Proficient in Visual Studio.Net, MatLab, Microsoft Office, SQL Server

- **Computer Languages:**

- Proficient in C, C++, C#, HTML, Java, JavaScript, Fortran, Turbo Pascal, Visual Basic, CPLEX, L^AT_EX, PHP, Very High Description Languages (VHDL), Assembler, UNIX Shells, SQL
- Familiar with Perl, Web Java (J2EE), Lindo, Adaptive Fuzzy Modeller (AFM)

Achievements and Activities

- Ph.D. research training and induction modules
- NET-ACE research seminars and lectures
- 17th–19th September 2008: *Network Theory & Applications to Computing and Engineering Conference* – Brunel University, West London
- 6th May 2008: BrunELT English Language Test, final mark 68.5
- 1st–2nd April 2008: *Brunel University Conference Poster* – Brunel University, West London
- 2nd–3rd May 2007: *Brunel University Conference Poster* – Brunel University, West London
- 26th–30th April 2007: *NET-ACE Skills Workshop* – Brunel University, West London
- 2nd–3rd May 2006: *Brunel University Conference Poster* – Brunel University, West London
- 24th–28th April 2006: *NET-ACE Workshop on theories from Scale Free and Small World Networks to problems in Computing and Engineering* – Brunel University, West London
- School year 1994/1995: Came 1st in the provincial *Chemistry Games* and 5th in the regional competition
- School years 1993/94 – 1994/95 – 1995/96 – 1996/97: Placed in the bulletin-board of honour of the Technical High School Guglielmo Marconi as student with the highest profit
- Summer 1994 and summer 1995: Two English courses at the *Kent School of English* – Broadstairs, Kent, United Kingdom

School Projects

- Implementation of a computer-aided system for management of tourist cruises
- Modelling of SO_2 concentration at a point with statistical approaches using *Neural Networks, Fuzzy Logic, Generalised Additive techniques*, and others
- Linear and statistical techniques of interpolation for *Multiple-Input-Multiple-Output* systems
- Project of a *Back Propagation Neural Network* in C++, and interpolation of a complex second order function from its random patterns
- Experience in *Data Mining, Web Usage Mining* and discovery of association rules from patterns, and project of a C++ software to implement the *Market Basket algorithm*
- Implementation of a C++ software to simulate the movement of ions into an ionic channel of a protein
- Project of a *State-Control Cellular Neural Network* from the model by Chua
- Simulation of a *Turbo Generator implant* with different kinds of fieldbus
- *3-D stereoscopic vision systems* through linear and non-linear methods for medical applications

Miscellaneous

- Strong verbal and written communication skills, excellent troubleshooting, debugging, and problem solving skills, very good learning capabilities, experience in team-working, highly motivated, hard worker, and willing to travel abroad
- Journal reviewer for *European Journal of Operational Research, Computers & Operations Research, Swarm Intelligence, Transactions on Autonomous and Adaptive Systems, Journal of Technological Forecasting & Social Change*, and *Soft Computing*