

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
- Stereoscopy and 3D vision systems

- Data Mining and Clustering methods
- Neural Networks and Cellular Neural Networks
- Field Programmable Gate Arrays (FPGA)

Work Experience

- **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, 2009. Heuristic approaches for the quartet method of hierarchical clustering. *IEEE Transactions on Knowledge and Data Engineering*, accepted for publication, <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, \LaTeX , 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*