

Sergio Decherchi

Electronics Engineer, PhD

Address: 30/A, Sal. Ca' Dei Baghini
16165 Genoa

✉ E-mail: sergio.decherchi@unige.it
<http://www.sedekfx.tk>

PERSONAL INFORMATION

Date of Birth February 20, 1983
Place of Birth Genoa, Italy, Europe
Nationality Italian
Marital Status Single

EDUCATION

- 2011 – now **Postdoc project *Computational and Machine Learning Tools for Biophysics, Drug Discovery and Development Department***, Italian Institute of Technology, Genoa, Italy.
- 2008 – 2011 **PhD in Machine Learning: *On the structure of the hypothesis space, model selection and applications of Statistical Learning Theory***, Sealab, Department of Biophysical and Electronics Engineering, University of Genoa, Italy.
Home: <http://www.dibe.unige.it>.
- 2007 **MS in Electronics Engineering**, Department of Biophysical and Electronics Engineering, University of Genoa, Italy.

LANGUAGES

Italian Fluent (mother tongue)
English Intermediate
Russian Beginner

PROFESSIONAL ACTIVITIES

Journal Reviewer: *Transactions on Neural Networks*, IEEE; *Transactions on Circuits and Systems I/II*, IEEE; *Journal of Circuits, Systems and Computers*, World Scientific;
Conference Reviewer: International Joint Conference on Neural Networks, IEEE (IJCNN), International Symposium Circuit And Systems, IEEE (ISCAS), International Symposium on Nonlinear Theory and its Applications IEICE, (NOLTA)

PROFESSIONAL EXPERIENCE

- 2011 – now Member of the *Computational Chemistry Group* at the Dept. of Drug Discovery and Development, Italian Institute of Technology.
Homepage: <http://www.iit.it>
- 2008 – 2011 Member of the *Smart Embedded Application Lab* (Sealab) at the Dept. of Biophysical and Electronics Engineering, University of Genoa.
Homepage: <http://www.sealab.dibe.unige.it>

RESEARCH INTERESTS

Machine Learning
Computational Biophysics
Embedded Systems
Applied Cryptography

PUBLICATIONS

- Journal Papers
- S. Decherchi, P.Gastaldo, R. Zunino. "Efficient Approximate Regularized Least Squares by Toeplitz Matrix ", *Pattern Recognition Letters*, Elsevier, Volume 32, Issue 3, February 2011, Pages 468-475 .
- S. Decherchi, P.Gastaldo, F. Sangiacomo, A. Leoncini, R. Zunino. "Operative Assessment of Predicted Generalization Errors on Non-Stationary Distributions in Data-Intensive Applications", *Intelligent Data Analysis*, IOS Press, 2010, in press.
- S. Decherchi, S.Tacconi, J.Reddi, F. Sangiacomo, A. Leoncini, R. Zunino. "Text Clustering for Digital Forensics Analysis", *Journal of Information Assurance and Security*, Special Issue CISIS 2009, 2010.
- D. Leoncini, S. Decherchi, O.Faggioni P. Gastaldo, M. Soldani, R. Zunino. "Linear SVM for Underwater Magnetic Signals Based Port Protection", *Journal of Information Assurance and Security*, Special Issue CISIS 2009, 2010.
- S. Decherchi, S. Ridella, P. Gastaldo, D. Anguita, R. Zunino. "Using Unsupervised Analysis to Constrain Generalization Bounds for Support Vector Classifiers", *IEEE Transactions on Neural Networks*, in press, 2010.
- S. Decherchi, P. Gastaldo, M. Parodi, R. Zunino. "Low Complexity Linear Circuit Implementation of Support Vector Machine Training", *Electronics Letters*, 2008.
- S. Decherchi, P. Gastaldo, J. Redi, R. Zunino. "A Text Clustering Framework for Information Retrieval", *Journal of Information Assurance and Security*, Special Issue CISIS 2008, 2009
- Conference Papers
- F. Sangiacomo, A. Leoncini, S. Decherchi, P. Gastaldo, R. Zunino. "SeaLab Advanced Information Retrieval", ICSC 2010, Pittsburgh .
- S. Decherchi, M. Parodi, S. Ridella. "A Neural Model Approach for Regularization in the Mean Estimation Case", IJCNN 2010, Barcellona, Spain.
- D. Leoncini, S. Decherchi, O. Faggioni, P. Gastaldo, M. Soldani and R. Zunino. "A Preliminary Study on SVM based Analysis of Underwater Magnetic Signals For Port Protection", CISIS 2009, Burgos, Spain.

S. Decherchi, S. Tacconi, J. Redi, A. Leoncini, F. Sangiacomo and R. Zunino. "Text Clustering for Digital Forensics Analysis", CISIS 2009, Burgos, Spain.

S. Decherchi, P. Gastaldo, M. Parodi, and R. Zunino. "Circuit implementation of SVM training", IJCNN 2009, Atlanta

S. Decherchi, J. Redi, P. Gastaldo and R. Zunino. "Maximal Discrepancy Bounds for Regularized Classifiers", IJCNN 2009, Atlanta

S. Decherchi, P. Gastaldo, S. Ridella, R. Zunino. "Explicit Overall Risk Minimization Transductive Bound", ICNPAA 2008, Genoa

S. Decherchi, P. Gastaldo, J. Redi, R. Zunino. "Hypermetric k-Means Clustering for Content-based Document Management", CISIS 2008, Genoa

S. Decherchi, P. Gastaldo, J. Redi, R. Zunino. "Non-Stationary Data Mining: the Network Security Issue", ICANN 2008, Prague

P. Gastaldo, G. Parodi, S. Decherchi and R. Zunino. "Efficient Implementation of SVM Training on Embedded Electronic Systems", WILF 2007, Genoa

S. Decherchi, G. Parodi, P. Gastaldo and R. Zunino. "Embedded Electronics System for Training Support Vector Machine", IJCNN 2006, Vancouver

Book Chapters S. Decherchi, P. Gastaldo, R. Zunino. "K-Means clustering for Content Based Document Management in Intelligence", in "Advances In Artificial Intelligence for Privacy Protection and Security", Editors: Augusti Solanas and Antoni Martinez Bellesté, World Scientific Publishing, 2009

TEACHING EXPERIENCE

Laboratory exercises Tutor for the course *Applied Mathematical Modeling And Statistics* held by Prof. Mauro Parodi and Prof. Sandro Ridella for the MS in Electronics Engineering, University of Genoa. 2008,2009

Teaching Assistant for the course *Systems and Algorithms for Data Protection* held by Prof. Rodolfo Zunino for the MS in Electronics Engineering, University of Genoa. 2008,2009

Teaching Assistant for the course *Embedded Systems* held by Prof. Rodolfo Zunino for the MS in Electronics Engineering, University of Genoa. 2008,2009

RESEARCH GRANTS AND PROJECTS

Public Grants Academic Research Grant 2009: *Development of a Circuitual Model for SVM Learning*. Granted by University of Genoa

Academic Research Grant 2008: *Development of a Circuital Model for SVM Learning*.
Granted by University of Genoa

Development of a Clustering Engine for the Job Market Analysis. 2008. Granted by
Regione Liguria.

Private Grants & Technology Transfer *Development of a Framework for Inference on Semantic Graphs*. Granted by Elsig
Datamat. 2010

Development of Software Primitives for Elliptic Curves Based Cryptography. Granted
by Ansaldo STS. 2010

Development of a Framework for Text Classification. Granted by Elsig Datamat. 2009