

Curriculum vitae

Andrea Splendiani



Rue Auguste Blanqui 19
35000 Rennes (France)
Home: +33 (0)6 888 99 404
Work: +33 (0)2 99 28 92 45
andrea.splendiani@univ-rennes1.fr
www.ea3888.univ-rennes1.fr

Viale della Vittoria 41
63017 Porto San Giorgio (Italy)
Home: +39 328 4146401
Skype: sergentpeng
andrea@sgtp.net
www.sgtp.net/AndreaSplendiani/

18th August, 1973

Nationality: Italian

Education

- 2006
- **PhD in computer science** at University of Milano-Bicocca (Milano, Italy)
PhD thesis: **Integration of ontologies and high-throughput data in bioinformatics**
Supervisor: Prof. Giancarlo Mauri
 - **DASI '06: Bertinoro PhD school on Data and Service Integration** (Bertinoro, Italy, October 10-15)
- 2004
- **3rd VIPS Advanced School on Computer Vision, Pattern Recognition and Image Processing** (Introduction to Bayesian Inference and Statistical Learning) Verona, Italy, November 15-19
 - **First International School on Biology, Computation and Information** (Mathematical modeling tools for systems biology, computational methods for the identification of regulatory motifs in genomic sequences) Dobbiaco (BZ), Italy, September 19-25
 - **1st International School on Advanced BioMedicine and Bioinformatics** Lipari Island, May 29 - June 5
- 2002
- "Laurea' degree in Information Technology Engineering (Ms equivalent, nominal duration of studies: 5 years + thesis) at Politecnico di Milano (Milano Italy). Marks 96/100.**
Thesis title: **GCDB: An information system for the study of gene expression**
Relevant subjects: Algebra&Logic, Theoretical computer science, Language and compilers design, Software engineering, Computer graphics and web development, Operating systems, Database design, Telematics, Electronics, Robotics, Signal processing, Systems theory, Control theory, Model identification and data analysis, Statistics.
- 1993
- "Maturità scientifica "** degree at Liceo scientifico Temistocle Calzecchi Onesti (Fermo, Italy) 60/60 with special honors

Professional experience

- 2007- **Postdoc** on the european project bootstrap (www.bootstrap.org). Topic: **bio-ontology** analysis. Located at the **Medical Informatics** Department of the University of Rennes 1.
- 2005-2006 Stagiaire Scientifique in the **Systems Biology Unit** of **Institut Pasteur**, Paris, under the supervision of Benno Schwikowski. (Working on **integration of pathway ontologies information and microarray data analysis**, Cytoscape, BioPAX working group)
- 2003- Participation at Leaf Bioscience s.r.l. as founder and CEO.
(Leaf Bioscience is an **"open source bioinformatic company"** project. Current turnover is around 60kE. Main project is www.biodirectory.it It is part of the EU network of excellence DC-thera (www.dc-thera.org) where it's responsible for the development of a portal/KMS for dendritic cell immunology in Europe.
- 2002-2005 **Research assistant** at university of Milano Bicocca, **Biotechnology and Bioscience dept.** and at **Genopolis** Consortium, under the supervision of Paola Ricciardi-Castagnoli
Planning, development and maintenance of an internal microarray database/LIMS for dendritic cells transcriptome profiling, that includes MAGE support and intuitive context based analysis/browsing interfaces.
- 2001-2002 Consultant at Biopolo scr.l. IT support and microarray data analysis (Affymetrix service provider)

Teaching and Tutoring

- 2002-2005 **Tutorials** on microarray databases at the University of Milano-Bicocca, Biotechnology and Bioscience dept. (Master in bioinformatics).
Tutorials at EMBO courses on functional genomics. “**Microarray databases**’ (2003), “**Network based functional annotation** ” (2005)
- 2002-2005 **Thesis supervisor** for undergraduate students at the **Computer Science Dept.** University of Milano-Bicocca.
Graph Analyzer (Gioia, 2003)
RVM: distributed execution of R scripts (Vanotti, Sesana 2004)
GeneBrowser: interactive context based browsing of microarray data (Aniello, Serina 2004)
CVS-BugTracker integration (Gelpi 2004)

Projects/Software

- 2007- Environment for ontology alignment and enrichment designed for the bio-domain.
- 2005- **RDFScape: Cytoscape plugin for the integration of ontologies and data analysis** (Java-Jena based, primarily targeted at BioPAX and microarray data) <http://www.bioinformatics.org/rdfscape/>
- 2005 **Cytoscape BioPAX importer plugin** (Protégé OWL-api based) currently available at www.geocities.com/sergentpenguin
- 3/2005- Collaboration in the integration of **Genopolis** Gene Expression database with **ArrayExpress (MAGE-ML based pipeline)** .
- 2002- www.biodirectory.it Italian biotechnology web directory (java,php,mysql)
- 2001-2005 **GCA: gene expression database** (php, java) (project, development and maintenance) <http://www.bioinformatics.org/genopolisdb/>
- 2000 Smart3web: Robotic arm simulator over the Internet (VRML, Java, Matlab)
- 1999 SimpleSemCC: Hierarchy of compilers and abstract virtual machine for SimpleSem (Java, JavaCC)
- 1998 Pretty Pascal: (Code formatter/analyzer based on context grammars)

Professional Skills

- Programming languages C, Java, php (some experience in many other languages)
- IT Technologies Unix (Linux) systems administration, basis in compiler design, basis in UML/eXtreme programming, web technologies, database design, Semantic Web related “principles and technologies”, Jena, Protégé, Eclipse, Subversion.
- Bioinformatics Basics of microarray data analysis (Affymetrix, R, pre-processing, clustering, PCA, functional enrichment...), bioinformatic IT systems (pipelines, microarray databases), pathway databases, representation and exchange languages (MAGE, BioPAX), Ontologies (OWL). Some specific software internals (Cytoscape).
- Other (Scientific) Basic knowledge of molecular and cell biology. Some notions of immunology. Basics of dynamic modeling/systems theory.
- Other (Business) Experience as a CEO of a small srl (Ltd) (negotiations, management of a group of 2-3 people, accounting, FP6 EU projects).

Language Skills

- Italian (mother tongue)
English (TOEFL taken in 1996: 623/660)
French (some basic knowledge, reading only)

Main Awards and Grants

- 2005- DC-Thera Network of Excellence grant for Integration for the development of a knowledge management systems and integration of data analysis open source resources, (awarded to Leaf Bioscience)
- 2005 ESF "Integrated Approaches to Functional Genomics" Exchange Fellowship ("network based analysis of gene expression data")
- 2004 Participation at the project Digital Gate to California after the selection of "Leaf Bioscience" as "innovative company". (met investors, legals and companies in the IT and bioinformatic sector in Silicon Valley).
- 2003 Awarded a financing from "Province of Milan" for new enterprise proposals ("startup, nuove imprese al via 2002")
- 2002-2005 Fellowship at the university of Milano Bicocca for the development of an integrated functional genomics platform

Professional associations

- 2005- Member of the "order of engineers" of Milan, civil, information, industrial sectors (no. A24699, admission test completed in 2002)
- 2004-/ Member of the International Immunomics Society
- 2004- Member of the Italian Bioinformatics Society
- 2001- Member of the International Society for Computational Biology

Personal profile

Curious and always willing to learn new subjects. Good problem solving skills, can get easily to the core of problems. Creative, at ease in international environment, good attitude to travel and deal with foreign cultures.

Objectives

I'm looking for a research position in the area of Semantic Web / Bioinformatics, where I've been focused on pathway ontologies and microarray data for a while. I already have a range of collaborations and projects in this area that I would like to maintain / pursue, for which I'm willing to apply for grants (some of the above project are already "financed").

I'm interested in projects at the boundary between academia and industry or which have a string applied focus.

Hobbies

Music, Motorcycling, Traveling, Burning Man

References

(e-mails are available upon request)

Prof. Paola Ricciardi-Castagnoli, Singapore Immunology Network (SIgN), Singapore (Employer, PhD co-advisor)

Prof. Giancarlo Mauri, Computer Science Dept., univ. of Milano Bicocca, Italy (PhD advisor)

Dot. Duccio Cavalieri, Pharmacology Dept., University of Florence, Italy (Pathway analysis advisor)

Prof. Carlo Ghezzi, Computer Engineering Dept., Politecnico di Milano, Italy (MS Thesis advisor)

Joanne Luciano Biopathway consortium and Harvard Medical School, USA (Collaboration on BioPAX)

Benno Schwikowski, Unité de Biologie Systémique, Institut Pasteur (PhD co-advisor)

Alan Ruttenberg, Science Commons, Boston (Collaboration on BioPAX)

Publications and communications

Journal Papers

Splendiani A

RDFScape: Semantic Web meets Systems Biology

to appear in BMC Bioinformatics 2008 (Apr)

Splendiani A, Brandizi B, Even G, Beretta O, Pavelka N, Pelizzola M, Foti M, Mauri G, Ricciardi-Castagnoli P.

The Genopolis Microarray Database

BMC Bioinformatics 2007 March 8;8(Suppl 1):S22

Pavelka N, Pelizzola M, Vizzardelli C, Capozzoli M, Splendiani A, Granucci F, Ricciardi-Castagnoli P.

A power law global error model for the identification of differentially expressed genes in microarray data.

BMC Bioinformatics. 2004 Dec 17;5(1):203.

Relevant communication at conferences and workshops (papers)

E. Beisswanger, V. Lee, A. Splendiani, O. Dameron, J. Kim, D. Rebholz-Schuhmann, U Hahn.

The Gene Regulation Ontology (GRO)

To appear in MIE (medical informatics europe) 2008 (pubmed indexed)

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Ontology based data analysis .

Dagstuhl proceedings, 2006. <http://drops.dagstuhl.de/opus/volltexte/2006/474/>

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Ontology based analysis of experimental data (position paper). Uncertainty Reasoning for the Semantic Web Workshop, International Semantic Web Conference, Galway 2005. ISWC-URSW 2005, p102-103

Selected posters

Andrea Splendiani,

RDFScape: Semantic Web meets Systems Biology

NETTAB (A Semantic Web for Bioinformatics: Goals, Tools, Systems, Applications) 2007, Pisa

ISMB (Intelligent Systems for Molecular Biology) 2007, Vienna

Andrea Splendiani, Elena Beisswanger, Jung-Jae Kim, Vivian Lee, Olivier Dameron and Dietrich Rebholz-Schuhmann

Bio-Ontologies in the context of the BOOTStrep project

Bio-Ontologies SIG Workshop 2007, Vienna

Andrea Splendiani, Marco Brandizi, O. Beretta, M. Capozzoli, N. Pavelka, M. Pelizzola, C. Vizzardelli, F. Granucci, P. Castagnoli

GCA, gene expression database of DC responses

ISMB 2004, Glasgow

A. Splendiani, C. Vizzardelli, N. Pavelka, M. Pelizzola, M. Capozzoli, F. Granucci e Paola Ricciardi Castagnoli, E. Virzi and P. Fantucci.

GTKrio: an Open Source Environment for Functional Genomics .

ISMB 2002, Edmonton

Relevant conferences and workshops attended

ISMB (Intelligent Systems for Molecular Biology) 2007, 2005-2001

BioPAX f2f meetings 2005-2007 (Definition of an ontology for pathway data exchange). New York, Detroit, Tokyo, Cold Spring, Palo Alto. (*)

MGED Meeting (Microarray Gene Expression Data Society meeting) 2003, Aix en Provence

Workshop on Pathway Discovery and Analysis in the context of "Functional Genomics, principles of Statistics and Biology" courses and workshops, Florence, 2005. (**)

ICSB (International Conference on Systems Biology) 2002, Stockholm

NETTAB (Network standards for bioinformatics) 2001, Genova

NETTAB (A Semantic Web for Bioinformatics: Goals, Tools, Systems, Applications) 2007, Pisa

NCBO Workshop Ontologies for Cellular Networks, Newark 2008 (*)

(*) oral presentations: "OWL vs non-OWL validation" and "Computing on BioPAX"

(**) oral presentation: "Introduction to BioPAX"