PERSONAL INFORMATION **Michela Fazzolari**

WORK EXPERIENCE

Mar 2016 – Feb 2018

Post-Doctoral Research Fellow
IIT - CNR, Pisa, Italy

- Post-doctoral Researcher within the MIB (My Information Bubble) project and the ReviewLand project.
- Tasks carried out:
  - **Software development in Python and Java for research activities.**
  - **Collection of online reviews from the web, by means of scraping and crawling scripts.**
  - **Analysis of online reviews through data mining techniques.**
  - **Application of machine learning algorithms to detect unreliable reviews.**
  - **Application of text mining techniques to online reviews.**
  - Production of scientific papers to be submitted to international journals and conferences.

Feb 2014 – Jul 2015

Post-Doctoral Research Fellow
Department of Computer Science - University of Pisa, Italy

- Post-doctoral Researcher within the SeaClouds (Seamless adaptive multi-cloud management of service-based applications) project funded by the European Commission within the 7th Framework Programme.
- Tasks carried out:
  - **Software development in Java for research activities.**
  - Development of software components.
  - Writing of technical reports and scientific papers.
  - Support for the organization of project meetings, publicity chair of 1st SeaClouds Workshop.
  - Production of newsletters and press releases.
  - Production of presentations for scientific conferences.

Jul 2010 – Jul 2013

Marie Curie Early Stage Researcher
Department of Computer Science and Artificial Intelligence - University of Granada, Spain

- Early Stage Researcher within the Marie Curie Initial Training Network MIBISOC (Medical Imaging using Bio-Inspired and Soft Computing) project.
- Tasks carried out:
  - **Development of software for research purposes in Java and C++.**
  - Writing of scientific papers ad technical reports.
  - Participation in international conferences.
  - Production of scientific presentations and posters.

Oct 2009 – Jun 2010

Development Engineer
Department of Information Engineering - University of Pisa

- Research activities and software development in Matlab.

Oct 2008 – Nov 2008

Part-time worker
Department of Foreign Languages and Literatures - University of Pisa

- Support activities for Dean's office staff.

EDUCATION AND TRAINING

Jul 2010 – Nov 2013

PhD in Information and Communication Technologies
University of Granada, Spain

- PhD topics: Computational Intelligence, Fuzzy Classification Systems, Large Scale and High dimensional Problems
- Thesis: "Study and Design of Multi-objective Evolutionary Fuzzy Systems for Improving the Accuracy-Interpretability Trade-off of Linguistic Fuzzy Rule-based Systems when Dealing with High Dimensional and Large Scale Problems", supervised by Prof. Francisco Herrera and Prof. Rafael Alcalá.

Sep2006 – Oct 2009	**M.Sc. in Computer Engineering**

University of Pisa, Italy

- Curriculum: networking and multimedia
- Final mark: 110/110
- Dissertation: "Design and development of a simulation software for faults analysis in photovoltaic fields", supervised by Prof. Beatrice Lazzerini, Prof. Francesco Marcelloni and Dr. Pietro Ducange.

Oct 2002 – Jul 2006	**B.Sc. in Computer Engineering**

University of Pisa, Italy

- Final mark: 110/110

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
English C1	C1	C1	C1	C1
IELTS Certification, final mark: 7/9				
Spanish C1	B2	C1	C1	B2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills
- Excellent ability of communication and teamwork gained during PhD studies and further collaborations.
- Ability to establish and maintain good working relationships with people of different cultural backgrounds.

Organisational / managerial skills
- Effective organizational and interpersonal skills.
- Problem-solving attitude.
- Competent in providing guidance and leadership to others.

Technical skills
- Deep knowledge of LaTeX mark-up language.
- Very good knowledge of C and C++ programming languages and Matlab environment.
- Good knowledge of Java and Python programming languages, web application development and web tools (HTML, PHP, CSS), Linux OS (Debian and Debian-like), UML modeling, Eclipse IDE, photo editing software (Gimp, Adobe Photoshop).
- Experience in working with Content Management Systems (Wordpress, Drupal, Joomla).
- Good knowledge of photovoltaic systems functioning and photovoltaic system faults.

Driving licence
- Car licence

ADDITIONAL INFORMATION

Research activity

Dr. Michela Fazzolari is a young researcher, holding a post-doc research fellowship at IIT-CNR within the Trustworthy and Secure Future Internet group, which she joined in March 2016. Her research activities currently include opinion mining and sentiment analysis, opinion spam detection, data mining and web mining, mainly carried on by applying cutting-edge machine learning techniques.

During the last year she has been working on the ReviewLand project, which is focused on the extraction, the elaboration and the interpretation of online users' reviews coming from e-advise websites, such as Booking and TripAdvisor. The first period of the project was devoted to the study of the techniques currently available for dealing with online information, resulting in the development of a crawler to extract online reviews. The data have been filtered to reduce noisy patterns, anonymized and gathered in a database. Then, several analyses have been performed on these data. 1) A first analysis aimed at identifying disagreement between the text and the score associated of a review, particularly focusing on hotel reviews. In fact, a review text can be subjective, thus texts with different opinions can feature the same score and vice-versa. The results of this study are useful both for customers and providers of online services, and they have been published in a recognized international journal [J5]. 2) A second analysis focused on the study of a method to cluster online reviews expressing similar opinions in their texts. This task was developed in collaboration with an Italian company, namely Lucense S.r.l., Lucca, and a new metric called 'adherence' was proposed to measure the correspondence between a text and a terminology set that characterizes a certain domain.

Research activity

Then, the metric was applied to measure the correlation with the score assigned to a review and finally a method has been proposed, which exploits the adherence to cluster reviews without knowing their score. The results of this study have been published in the proceeding of an international conference [C5]. 3) Additional analyses have been performed focusing on the province of Lucca, Italy, aimed at extracting relevant information about the characteristics of Lucca visitors and their preferred destinations according to the country origin. Further analyses are currently being developed to define the 'recurrent tours' of visitors and the results will be submitted to an international conference.

Dr. Fazzolari is currently carrying on additional investigations in collaboration with 'Università degli Studi Mediterranea', Reggio Calabria, with the aim of developing a system able to identify opinion spammers and suspicious reviews. A further collaboration recently started with the IMT School for Advanced Studies, Lucca, devoted to the identification of groups of fake reviewers by means of randomized bipartite networks.

Dr. Fazzolari was previously involved in other projects, funded by the European Community. In particular from July 2010 to November 2013, Dr. Fazzolari was enrolled in the MIBISOC (Medical Imaging Using Bio-inspired and Soft Computing) project as an Early Stage Researcher within the Marie Curie Initial Training Network within the European Commission's 7th Framework Programme. During these years, she developed her PhD thesis under the supervision of prof. Francisco Herrera and prof. Rafael Alcalá, at the University of Granada in Spain, focusing on the field of Computational Intelligence and in particular on the field of Multi-Objective Evolutionary Fuzzy Systems (MOEFSs). In November 2013 she achieved the PhD in Information and Communication Technologies.

Other activities

Reviewer of:
- Information Science, Elsevier
- MIBISOC 2013 International Conference, Brussels, Belgium, May 15-17, 2013
- ISDA (Intelligent Systems Design and Applications) 2011 International Conference, Cordoba, Spain, November 22-24, 2011

Attendee and Speaker at:
- ICWE 2017 International Conference, Rome, Italy,
- MIBISOC 2013 International Conference, Brussels, Belgium, May 15-17, 2013
- IEEE Symposium Series on Computational Intelligence (IEEE SCCI 2013), Singapore, April 16-19 2013

Attendee at:
- Second Technical Course of the MIBISOC Marie Curie International Training Network, University of Parma, Italy, February 21-25, 2012
- First Technical Course of the Marie Curie International Training Network, European Centre of Soft Computing, Mieres, Spain, July 4-8, 2011

References

Francesco Marcelloni
Associate Professor, University of Pisa
Address: Dipartimento di Ingegneria della Informazione,
Via Diotisalvi, 2 - 56122 Pisa, Italy
Phone: +39 050 2217678
E-mail: f.marcelloni@iet.unipi.it

Francisco Herrera
Full Professor, University of Granada
Department Computer Science and Artificial Intelligence,
Calle Daniel Saucedo Aranda, 18071 Granada, Spain
Phone: +34 958 240598
E-mail: herrera@decsai.ugr.es

Oscar Cordon
Full Professor, University of Granada
Department Computer Science and Artificial Intelligence,
Calle Daniel Saucedo Aranda, 18071 Granada, Spain
Phone: +34 958 240803
E-mail: ocordon@decsai.ugr.es

Journal papers

M. Fazzolari, M. Petrocchi, A.Spognardi, *Predicting online review scores across reviewer categories.* Knowledge and Information Systems, under submission.

P. Ducange, M. Fazzolari, M. Petrocchi, M. Vecchio, *An intelligent system for social media listening based on cross-source sentiment analysis models.* Information Fusion, under submission.

M. Fazzolari, M. Petrocchi, *Enriching Travelling Information Through Online Reviews Analysis.* Information Technology and Tourism, under submission.

[J5] M.Fazzolari, V. Cozza, M. Petrocchi, A.Spognardi, *A Study on Text-Score Disagreement in Online Reviews.* Cognitive Computation 9(5): 689-701 (2017).

[J4] A. Brogi, J. Carrasco, J. Cubo, E. Di Nitto, F. Duràn, M. Fazzolari, A. Ibrahim, E. Pimentel, J. Soldani, P. Wang, F. D'Andria, *Adaptive management of applications across multiple clouds: The SeaClouds Approach.* CLEI Electron. J. 18(1) (2015).

[J3] M. Fazzolari, R. Alcalá, F. Herrera, *A Multi-Objective Evolutionary Method for Learning Granularities Based on Fuzzy Discretization to Improve the Accuracy-Complexity Trade-Off of Fuzzy Rule-Based Classification Systems: D-MOFARC Algorithm.* 24: 470-481 (2014).

[J2] M. Fazzolari, B. Giglio, R. Alcalá, F. Marcelloni, F. Herrera, *A study of the Application of Instance Selection Techniques to Improve the Accuracy-Complexity Trade-Off in Genetic Fuzzy Rule-Based Classifiers when Dealing with Small and Medium-Large Datasets.* Knowledge-Based Systems, 54: 32-41 (2013).

[J1] M. Fazzolari, R. Alcalá, Y. Nojima, H. Ishibuchi, F. Herrera, *A Review of the Application of Multi-Objective Evolutionary Fuzzy Systems: Current Status and Further Directions.* IEEE Transactions on Fuzzy Systems, 21(1): 45-65 (2013).

Conference proceedings

[C5] M. Fazzolari, M. Petrocchi, A. Tommasi, C. Zavattari, *Mining Worse and Better Opinions - Unsupervised and Agnostic Aggregation of Online Reviews.* International Conference on Web Engineering (ICWE 2017), Rome (Italy), pp. 494-506.

[C4] M. Fazzolari, R. Alcalá, F. Herrera, *A Method for Learning Granularities to Improve the Accuracy-Complexity Trade-Off of Fuzzy Rule-Based Classifiers.* International Conference on Medical Imaging using Bio-Inspired and Soft Computing (MIBISOC 2013), Brussels (Belgium).

[C3] M. Fazzolari, R. Alcalá, Y. Nojima, H. Ishibuchi, F. Herrera, *Improving a Fuzzy Association Rule-Based Classification Model by Granularity Learning based on Heuristic Measures over Multiple Granularities.* IEEE International Workshop on Genetic and Evolutionary Fuzzy Systems (GEFS 2013), Singapore, pp. 44-51.

[C2] B. Giglio, F. Marcelloni, M. Fazzolari, R. Alcalá, F. Herrera, *A Case Study on the Application of Instance Selection Techniques for Genetic Fuzzy Rule-Based Classifiers.* IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2012), Brisbane (Australia), pp. 920-927.

[C1] P. Ducange, M. Fazzolari, B. Lazzerini, F. Marcelloni, *An Intelligent System for Detecting Faults in Photovoltaic Fields,* in Proc of. International Conference on Intelligent Systems Design and Application (ISDA 2011), Cordoba (Spain), pp. 1341-1346.

Theses

[T2] M. Fazzolari, *Study and Design of Multi-objective Evolutionary Fuzzy Systems for Improving the Accuracy-Interpretability Trade-off of Linguistic Fuzzy Rule-based Systems when Dealing with High Dimensional and Large Scale Problems",* 2013.

[T1] M. Fazzolari, *Design and Development of a Simulation Software for Fault Analysis in Photovoltaic Fields,* Master Thesis (in Italian), 2009.

Personal information disclosure ■ I authorize the processing of my personal data.

Pisa, 08/02/2018