

# Curriculum Vitae et Studiorum

MARIA FEDERICO

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## Personal Information

- **Name and Surname:** Maria Federico
- **Work address:** Department of Communication and Economy, University of Modena and Reggio Emilia, viale Allegri 15, Reggio Emilia (Italy)
- **Phone number:** +390592056331
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## Current position

- **July 2012 – January 2013:** Temporary contract for the project “Realizzazione di uno sportello relativo all’utilizzo di strumenti dispensativi a favore degli studenti disabili e con Disturbo Specifico dell’Apprendimento (DSA) dell’Università degli Studi di Modena e Reggio Emilia” at Servizio Accoglienza Studenti Disabili, Università di Modena e Reggio Emilia
- Professor with a temporary appointment for the course *Web usability*, Master Degree in Pubblicità, Editoria e Creatività d’Impresa, Curriculum: Web communication, Facoltà di Scienze della Comunicazione e dell’Economia, Università di Modena e Reggio Emilia, in academic year 2012-2013
- Professor with a temporary appointment for the course *Laboratorio di grafica e videocomunicazione*, Bachelor Degree in Scienze della Comunicazione, Facoltà di Scienze della Comunicazione e dell’Economia, Università di Modena e Reggio Emilia, in academic year 2012-2013

## Education and Training

- **March 2011:** PhD received from the School of Graduate Studies in Multiscale Modelling, Computational Simulations and Characterization in Material and Life Sciences, University of Modena and Reggio Emilia (Italy)  
*Thesis title:* Discovery of motifs and long repeats in biological sequences
- **October 2006:** Master of science degree in Information Technologies at University of Pisa (Italy), Faculty of Mathematics, Physics and Natural Sciences  
*Thesis title:* Notions of maximality for motifs in biological sequences  
*Grade:* 110/110 cum laude

- **March 2004:** Bachelor of science degree in Computer Science at University of Pisa (Italy), Faculty of Mathematics, Physics and Natural Sciences  
*Thesis title:* Database of publications of the Department of Computer Science  
*Grade:* 109/110
- **July 2000:** High School Science diploma at high school science XXV Aprile of Pontedera (PI), Italy  
*Grade:* 85/100

## Scientific Experience abroad

**August 2009 – April 2010:** *Visiting Scholar* at the BAOBAB team, headed by Dr Marie-France Sagot, INRIA Rhône-Alpes and Laboratoire de Biométrie et Biologie Évolutive, Université Claude Bernard – Lyon 1 (France)  
*Research activity:* Finding long multiple repeats in biological sequences using filtering techniques

## Skills

### Language

- English: excellent reading, writing and verbal skills
- French: good reading, writing and verbal skills

### Programming languages

- Excellent knowledge of C, C++, Java, Perl
- Excellent knowledge of Java applet, Javascript, JSP, PHP, HTML(5), XHTML, XML, CSS(3)
- Good knowledge of bash shell scripting

## Didactic Activity

### Courses

#### [A.A. 2011-2012]

- *Web usability*, Corso di Laurea Magistrale in Pubblicità, Editoria e Creatività d'Impresa, Curriculum: Web communication, Facoltà di Scienze della Comunicazione e dell'Economia, Università di Modena e Reggio Emilia
- *Laboratorio di grafica e videocomunicazione*, Corso di Laurea in Scienze della Comunicazione, Facoltà di Scienze della Comunicazione e dell'Economia, Università di Modena e Reggio Emilia

#### [A.A. 2010-2011]

- *Web usability*, Corso di Laurea Magistrale in Pubblicità, Editoria e Creatività d'Impresa, Curriculum: Web communication, Facoltà di Scienze della Comunicazione e dell'Economia, Università di Modena e Reggio Emilia

### Seminars

#### [A.A. 2009-2010]

- *Algoritmi e Strutture Dati*, Corso di Laurea in Informatica, Facoltà di Scienze Matematiche Fisiche e Naturali, Università di Modena e Reggio Emilia

## Scientific Activity

### National and International research activity

- **May 2011 – March 2012:** Temporary contract for the project “Analisi e progettazione di meccanismi per migliorare l'accessibilità dei contenuti multimediali in ambito didattico” at Servizio Accoglienza Studenti Disabili, Università di Modena e Reggio Emilia
- **August 2009 – April 2010:** *Visiting* at the BAOBAB team, headed by Dr Marie-France Sagot, INRIA Rhône-Alpes and Laboratoire de Biométrie et Biologie Évolutive, Université Claude Bernard – Lyon 1 (France)
- **May 2007 – December 2007:** Research fellow at Institute of Computational Linguistics (ILC) Italian National Research Council (CNR) of Pisa

*Subject:* Modeling of text syntactic analysis by supervised Machine Learning techniques based on Maximum Entropy

- **February 2007 – March 2007:** Occasional professional collaboration duty for the project at Institute of Computational Linguistics (ILC) Italian National Research Council (CNR) of Pisa

*Subject:* Design and development of a tool for italian stochastic chunking based on the principle of Maximum Entropy” under the project SmartText

### **Member of International program committies**

- International Conference on Information Technology in Bio- and Medical Informatics (ITBAM'12) in conjunction with the 23<sup>th</sup> DEXA – DEXA'12, September 3-7, 2012, Wien (Austria).
- International Conference on Information Technology in Bio- and Medical Informatics (ITBAM'11) in conjunction with the 22<sup>st</sup> DEXA – DEXA'11, August 29 – September 2, 2011, Toulouse (France).
- International Conference on Information Technology in Bio- and Medical Informatics (ITBAM'10) in conjunction with the 21<sup>st</sup> DEXA – DEXA'10, August 30 – September 3, 2010, Bilbao (Spain).

### **Member of Research projects**

- **2008-2009 MIUR FIRB:** Internazionalizzazione Italia-Israele on Pattern Discovery in Discrete Structures with Applications to Bioinformatics. National scientific responsible: Prof. Raffaele Giancarlo (University of Palermo, Italy)
- **2008 PRIN:** Problemi inversi in medicina e astronomia. National scientific responsible: Prof. Mario Bertero (University of Studies of Genova, Italy)

### **Reviewing activity for conferences**

- International Conference on Information Technology in Bio- and Medical Informatics (ITBAM'12) in conjunction with the 23<sup>th</sup> DEXA – DEXA'12, September 3-7, 2012, Wien (Austria).
- International Conference on Information Technology in Bio- and Medical Informatics (ITBAM'11) in conjunction with the 22<sup>nd</sup> DEXA – DEXA'11, August 29 – September 2, 2011, Toulouse (France).
- International Conference on Information Technology in Bio- and Medical Informatics (ITBAM'10) in conjunction with the 21<sup>st</sup> DEXA – DEXA'10, August 30 – September 3, 2010, Bilbao (Spain).

## National and International conference talks

- *Enhancing Learning Accessibility through Fully Automatic Captioning*. 9th International Cross-Disciplinary Conference on Web Accessibility – W4A 2012, Lyon (France), April 16-17, 2012.
- *Removing artifacts of approximated motifs*. 2nd International Conference on Information Technology in Bio- and Medical Informatics - ITBAM 2011, Toulouse (France), August 29 – September 2, 2011.
- *An optimized filter for finding multiple repeats in DNA sequences*. 8th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2010), Hammamet (Tunisia), May 16-19, 2010.
- *An Efficient Algorithm for Planted Structured Motif Extraction*. Workshop on Breaking Frontiers of Computational Biology (COMPBIO'09), Ischia (Italy), May 18-20, 2009.
- *Suffix Tree Characterization of Maximal Motifs in Biological Sequences*. FIRB'09 Annual Project Meeting for Pattern Discovery in Discrete Structures with Applications to Bioinformatics, University of Palermo, Dipartimento di Matematica e Applicazioni (Italy), February 23-24, 2009
- *Suffix Tree Characterization of Maximal Motifs in Biological Sequences*. Workshop on Algorithms in Molecular Biology (ALBIO'08), Wien (Austria), July 7-9, 2008
- *Maximum Entropy for Italian PoS Tagging*. EVALITA 2007, Rome (Italy), September 10, 2007

## Publications

### National and International Journals

- [1] M. Federico, M. Leoncini, M. Montangero, P. Valente. “Direct vs 2-Stage Approaches to Structured Motif Finding”, *Algorithms for Molecular Biology*, 2012 Aug 21;7(1):20. [Epub ahead of print]. ISSN: 1748-7188
- [2] N. Dusi, M. Federico, M. Furini. MovieRemix: Having Fun Playing with Videos, *International Journal of Computer Games Technology*, vol. 2011, Article ID 857371, 13 pages, 2011. doi:10.1155/2011/857371
- [3] M. Federico, N. Pisanti. “Suffix Tree Characterization of Maximal Motifs in Biological Sequences”, *Theoretical Computer Science*, Vol. 410, Issue 43, pages 4391-4401, 2009. ISSN:0304-3975
- [4] F. Dell'Orletta, M. Federico, A. Lenci, S. Montemagni, V. Pirrelli. 2007. Maximum Entropy for Italian PoS Tagging. *Intelligenza artificiale*, Vol. IV, Number 2, pag. 10-11, June 2007. ISSN: 1724-8035

### International proceedings

- [5] M. Federico, M. Furini. “Enhancing Learning Accessibility through Fully Automatic Captioning”, *Proceedings of the 9th International Cross-Disciplinary Conference on Web Accessibility*, Lyon (France), 16-17 Aprile, 2012. ISBN: 978-1-4503-1019-2 .
- [6] M. Federico, P. Peterlongo, N. Pisanti, M.-F. Sagot. “Finding Long and Multiple Repeats with Edit Distance”. *Proceedings of the Prague Stringology Conference 2011*, pag. 83-97, Prague (Czech Republic), August 29-31, 2011. ISBN: 978-80-01-04870-2
- [7] M. Federico, N. Pisanti. “Removing artifacts of approximated motifs”, *Proceedings of the 2nd International Conference on Information Technology in Bio- and Medical Informatics - ITBAM 2011*, Lecture Notes in Computer Science (LNCS) vol. 6865 pag. 153-167, Toulouse (France), August 29 – September 2, 2011. ISBN: 978-3-642-23207-7
- [8] L. Palmieri, M. Federico, M. Leoncini, M. Montangero, P. Valente. “A High Performing Tool for Residue Solvent Accessibility Prediction Using Sequence Homology”. *Proceedings of the 2nd International Conference on Information Technology in Bio- and Medical Informatics - ITBAM 2011*, Lecture Notes in Computer Science (LNCS) vol. 6865 pag. 138-152, Toulouse (France), August 29 – September 2, 2011. ISBN: 978-3-642-23207-7
- [9] M. Federico, P. Peterlongo, N. Pisanti. “An optimized filter for finding multiple repeats in DNA sequences”, *Proceedings of the 8th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2010)*, Hammamet (Tunisia), May 16-19, 2010. ISBN: 978-1-4244-7715-9
- [10] M. Federico, P. Valente, M. Leoncini, M. Montangero, R. Cavicchioli. “An Efficient Algorithm for Planted Structured Motif Extraction”, *Proceedings of ACM International Conference on Computing Frontiers 2009 (COMPBIO'09)*, Ischia (Italy), May 8-20, 2009. ISBN:978-1-60558-556-7

- [11] M. Federico, N. Pisanti. 2008. “Suffix Tree Characterization of Maximal Motifs in Biological Sequences”, *Proceedings of Bioinformatics Research and Development (BIRD)*, Springer Communications in Computer and Information Science 13, pages 456--465, Wien (Austria), July 7-9, 2008. ISBN: 978-3-540-70598-7
- [12] A. Cappelli, E. Giovannetti, M. Federico. 2005. “The Role of Communication in Human-Robot Interaction”, *Proceedings of the Second Robocare Workshop*, pages 19-24, Rome (Italy), May 5, 2005. ISBN 88-85059-19-8

## Technical Reports

- [13] F. Dell'Orletta, M. Federico, E. Giovannetti, A. Lenci, S. Marchi, A. Trabucco, V. Pirrelli. “Language Recognition Tool, Specifiche di Implementazione”, Rapporto Tecnico ILC TW 2007 01- Progetto Smarttext, ILC-CNR, Pisa, Italy, 2007.
- [14] F. Dell'Orletta, M. Federico, E. Giovannetti, A. Lenci, S. Marchi, A. Trabucco, V. Pirrelli. “Segmentazione di un Testo Italiano in Token”, Rapporto Tecnico ILC TW 2007 02- Progetto Smarttext, ILC-CNR, Pisa, Italy, 2007.
- [15] F. Dell'Orletta, M. Federico, E. Giovannetti, A. Lenci, S. Marchi, A. Trabucco, V. Pirrelli. “Analisi Morfosintattica per l'Italiano”, Rapporto Tecnico ILC TW 2007 03- Progetto Smarttext, ILC-CNR, Pisa, Italy, 2007.
- [16] F. Dell'Orletta, M. Federico, E. Giovannetti, A. Lenci, S. Marchi, A. Trabucco, V. Pirrelli. “Part-of-Speech Tagging per l'Italiano”, Rapporto Tecnico ILC TW 2007 04- Progetto Smarttext, ILC-CNR, Pisa, Italy, 2007.
- [17] F. Dell'Orletta, M. Federico, E. Giovannetti, A. Lenci, S. Marchi, A. Trabucco, V. Pirrelli. “Specifiche di Chunking per l'Italiano”, Rapporto Tecnico ILC TW 2007 05- Progetto Smarttext, ILC-CNR, Pisa, Italy, 2007.
- [18] F. Dell'Orletta, M. Federico, E. Giovannetti, A. Lenci, S. Marchi, A. Trabucco, V. Pirrelli. “Specifiche di Named Entity Recognition per l'Italiano”, Rapporto Tecnico ILC TW 2007 06- Progetto Smarttext, ILC-CNR, Pisa, Italy, 2007.

## Submitted Papers

- M. Federico, M. Furini. “An Automatic Caption Alignment Mechanism for off-the-shelf Speech Recognition Technologies”. Submitted to International Journal.
- M. Federico, P. Peterlongo, N. Pisanti, M.-F. Sagot. “RIME: Repeat Identification”. Submitted to International Journal.

*I authorise the handling of my personal information in compliance with Legislative Decree no. 196/03, June 2003.*

September 26, 2012

Maria Federico