

Curriculum vitae:

Francesca Bonin

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Highlights

Research Scientist in Artificial Intelligence and NLP, orientated on Natural Language data. Currently leading a group of 5 researchers within IBM Research Europe in finding synergies between research goals and business goals for internal and external stakeholders. Helping in the definition of the internal team strategy.

Education

September 2011 – June 2016

PhD in Natural Language Processing

School of Computer Science and Statistics, Trinity College Dublin (Ireland).

Advisors: Dr. Carl Vogel and Prof. Nick Campbell.

Focus: NLP, Dialogue Processing, Conversational Analysis, Multimodal Information Extraction, Social Signal Processing, Feature Engineering, Machine Learning.

Publications: [1,2,3,4,5,6,9,10,12,13,14,16,17,18,19,20,21,22]

September 2005- December 2007

M.Sc. in Computer Science for the Humanities. Major in Language Technologies

University of Pisa (Italy).

Thesis: Natural Language and Ontologies. Text Simplification for human machine interaction

Grade: 110/110 with honors.

Advisors: Prof. Alessandro Lenci, Raffaella Bernardi

Focus: Natural Language Processing, Semantic Web, and Ontologies.

Publications: [29]

September 2001-June 2005

B.A. in Computer Science for the Humanities. Major in Linguistics

University of Pisa (Italy).

Thesis: A computational grammar for Italian functional analysis

Grade: 110/110 with honors.

Advisor: Prof. Alessandro Lenci.

Focus: Natural Language Processing, Syntactic Parsing.

Work experiences

April 2018 – current

IBM - Principal Investigator - Research Scientist IBM Ireland, Dublin, Ireland

Leading a group of 5 researchers towards project planning, stakeholder satisfaction and business definition. Defining the overall strategical value of the project within and outside IBM.

Projects: Human Behavior Change Project

Focus: Leadership role, project planning and strategy definition

Personal contributions.

- **Human Behavior change project:** Principal Investigator

October 2015 – April 2018

IBM - Research Scientist IBM Ireland, Dublin, Ireland

Projects: Project Debater

Focus: Research on Natural Language Processing, Data Science, Information Extraction, Sentiment Analysis, Machine Learning.

- Personal contributions.
 - **Project Debater:** Lead of the annotator team. Participation to design and development of the Project Debater with focus on sentiment analysis [\[video\]](#)
 - **DECODE project:** contributing to NLP based system for detecting decisions in meetings. [\[video\]](#)
 - Participation to design and development within the Relationship Insight project [1p]
- http://researcher.watson.ibm.com/researcher/view_group.php?id=5443

June 2013 – October 2013

TELEFONICA - Research Intern - Telefonica Research, Barcelona, Spain

Advisors: Nuria Oliver, Jose San Pedro Wandelmer.

Projects: Callnotes: Information extraction from spontaneous conversations.

- Focus: Research on information extraction; development of a model for context aware information extraction from telephone conversations
- Personal contribution: design and development of a context aware classifier for events detection in conversations (Python)
- Publications: [11]

October 2009 – October 2011

CIMEC - Research Fellow: Computational linguist - CIMEC, University of Trento, Italy

Advisor: Prof. Massimo Poesio

Projects: *LiveMemory* - Active Digital Memories of Collective Life. Funded by Provincia Autonoma di Trento.

- Focus: Research in Domain Adaptation, Information Extraction (NER), Active Learning and Semantic Annotation.
- Personal contribution: development of new annotation schemes for domain specific corpora. Feature engineering. Project manager of teams of linguists and domain experts for data annotation tasks
- Publications: [7,15, 23, 24].

June 2009 – April 2011

Research Fellow: Computational linguist - Computational Linguistic Institute, Italian National Research Council (Italy)

Advisor: Prof. Simonetta Montemagni

Projects: *Firb Linguistica Santagata* - Integrated platform for a semantic multilingual information extraction from cultural Web documents.

- Focus: Research in Terminology Extraction, Domain Adaptation, and Information Extraction.
- Personal contribution: contribution to design and development of new algorithms for Italian multiwords extraction (Python).
- Publications [8,25,26,27,27]

March 2009 – July 2009

Research Fellow: Computational linguist - KRDB Centre, Free University of Bolzano-Bozen (Italy)

Advisor: Raffaella Bernardi

Projects: *BoB project*: development of a multilingual web-based chatterbot application (question answering) for FAQs.

- Focus: Research in Syntactic parsing, Dialogue Processing.
- Personal contribution: development of an NLP ruled based grammar for Italian question answering. Contribution in the development of an Italian automatic chatbot.

March 2007 – December 2007

Research Fellow: Computational linguist - KRDB Centre Free University of Bolzano-Bozen (Italy)

Projects: *Mivas project*: educational software development in cooperation with the University of Bolzano.

- Focus: development of linguistic software for education.
- Personal contribution: analysis of dependency structures in an Italian corpus of primary school essays by means of NLP tools and corpus linguistics.

June 2005- October 2005

Intern - Computational Linguistic Institute of Pisa, Italian National Research Council (Italy)

- Focus: Research on Syntactic parsing.
- Personal contribution: Development of Computational Grammars for Italian

Other Work experiences

October 2008 – February 2009

Contractor: Computational linguist - European Parliament, Luxembourg (Luxembourg)

- Terminology database management.
- In charge of relations between IT sector and linguistic Units: fostering and leveraging dialogues between IT professionals and linguistic professionals.
- Internal website development advisor.

June 2008 – October 2008

SEO Web Content Manager - TSW, search marketing, Treviso (Italy)

- Coordination of search engine optimization campaigns.
- Copywriter for customers' websites (Italian and international companies such as Illy caffè , Peugeot, Poste.it, Seat). Management of web marketing campaigns (Link building, PPC, Adwords marketing strategies).

January 2008 – May 2008

Press officer intern - Italian Mission of United Nations New York (New York-USA)

- Web content manager and editor of the Mission web-site (http://www.italyun.esteri.it/rappresentanza_onu).

Grant and Awards

- September 2015: ISCA Travel Grant to attend INTERSPEECH 2015
- April 2014: Google Doctoral Workshop on Speech Technology invitation and travel grant.
- September 2011: Awarded the Innovation Bursary through Innovation Academy.
- June 2011: Awarded a full scholarship at Sole 24 Ore Business School.
- September 2009: Awarded a three years research scholarship at Cimec, Trento (the Italian Ministry of Public and education – public competition).

Scientific Organization and Activities

Co-Chair:

- November 2018: MA3HMI workshop – Satellite of ICMI 2018
- November 2016: : MA3HMI workshop – Satellite of ICMI 2016

- September 2014: MA3HMI workshop – Satellite of Interspeech 2014, Singapore, Singapore.
- September 2012: MA3 workshop – Satellite of IVA 2012, San Jose, California, USA.
- December 2009: workshop “The changing world in Translation Seminars at the European Parliament”, Luxembourg, Luxembourg.

Editor:

- Ronald Böck, Francesca Bonin, Nick Campbell, Ronald Poppe: Proceedings of the Workshop on Multimodal Analyses enabling Artificial Agents in Human-Machine Interaction, MA3HMI@ICMI 2016, Tokyo, Japan, November 16, 2016. ACM 2016, ISBN 978-1-4503-4562-0
- Proceedings of MA3HMI workshop – Satellite workshop of Interspeech 2014. Böck, **Bonin**, Campbell, Poppe. Springer, In press. [1]
- Guest Editor for the Special Issue ‘From multimodal analysis to real-time interactions with virtual agents’ Journal of Multimodal User Interfaces (2014), Poppe, Boeck, **Bonin**, Campbell, de Kok, Traum editors. [2]
- Joint Proceedings of the IVA 2012 workshops: MA3 and RCVA (2012). Böck, **Bonin**, Campbell, Edlund, De Kok, Poppe, Traum: editors. ISBN: 978-3-940961-83-9. [3]

PC member: AMIA 2020, ACL 2019, INTERSPEECH 2019, EMNLP2018, COLING 2018, ACL 2018, INTERSPEECH 2018, CONLL 2017, ACL 2017, COLING 2016, INTERSPEECH 2017, SPEECH PROSODY 2016, LREC 2016, CLIC-it 2015, INTERSPEECH 2015, IUI 2015 , LREC 2014 , IUI 2014 , CLIC-it 2014 , Speech-Prosody 2014 , Workshop on Personality Recognition – ICWSM 2013 , CEEC 2013.

Journal reviewer:

Journal of Multimodal User Interfaces, Transaction on Affective Computing

Academic Teaching and tutoring

Teaching

2012-2013 - Part Time Lecturer in Representation and Computation (introduction to NLP), Undergraduate Course in Computer Science and Language, School of Computer Science and Statistics, Trinity College Dublin.

2013-2014 - Part Time Lecturer in Representation and Computation (introduction to NLP), Undergraduate Course in Computer Science and Language, School of Computer Science and Statistics, Trinity College Dublin.

Tutoring

2016: Mentoring Tuan Tran as a summer intern at IBM research

2011-2012: Thesis Tutor. Candidate: Aronne Noriller, M.A. Student. Thesis title: Named Entity Recognition Techniques for the archaeological domain. M.A. in “Conversazione dei Beni culturali”, University of Trento, Italy.

2010-2011: Internship supervision of Margherita Luciani, M.A. student in Linguistics, University of Pisa.

Language skills

Italian - native speaker

English - proficient user

Spanish/Castilian - independent user

Technical skills

Programming, Tools and Libraries:

[daily use] R, AWK, UNIX command line tools, shell scripting, ggplot2

[per-project use] Java, Python (with libraries as sklearn, pandas, gensim), Stanford NLP.
 [knowledge of] Perl, Weka, NLTK.

Collaboration tools: Git
 Typesetting Languages: LaTeX
 OS: Mac OS, Linux (Ubuntu, Fedora)
 Web editing: HTML, XHTML, CSS
 Project Management Software: MS Project / Merlin
 Video editing: iMovie

Additional information

Women in Tech (WITS) member
 Freelance Journalist – enrolled in the Italian National Register since 2005.

United Nations online volunteering: Reaching Hearts International - Reaching Hearts for Kids: website maintenance and improvement; design, usability and accessibility aspects. Tools: Dreamweaver, Adobe Illustrator, Photoshop.

Press Releases

New York Time: <https://www.nytimes.com/aponline/2018/06/18/us/ap-us-ibm-ai-debater.html>
 Business insider: <http://uk.businessinsider.com/ibm-debater-supercomputer-can-argue-and-debate-humans-2018-6?IR=T>
 BBC: <https://www.bbc.com/news/technology-44531132>
 Verge: https://www.theverge.com/2018/6/18/17477686/ibm-project-debater-ai?utm_campaign=theverge&utm_content=entry&utm_medium=social&utm_source=twitter
 The Guardian: <https://www.theguardian.com/technology/2018/jun/18/artificial-intelligence-ibm-debate-project-debater>
 Fortune: <http://fortune.com/2018/06/18/ibm-jeopardy-ai-debate/>
 USA today: <https://t.co/Xo5Q9zq6vo>
 Siecle digital: <https://siecledigital.fr/2018/06/20/project-debater-lia-dibm-capable-de-debattre-avec-des-humains/>
 Corriere della Sera: https://www.corriere.it/tecnologia/18_giugno_20/uomo-contro-machina-prima-sfida-dialettica-finisce-un-pareggio-e6207754-746f-11e8-993d-4e6099a1c06b.shtml

References

Available upon request

Publications

Patents

Granted

[1p] EXTRACTION AND SUMMARIZATION OF DECISION ELEMENTS FROM COMMUNICATIONS, Léa A. Deleris, Debasis Ganguly, Killian Levacher, Martin Stephenson, Francesca Bonin. US10832009B2

Filed

- [2p] Discovery, characterization, and analysis of interpersonal relationships extracted from unstructured text data, Bonin, Deleris, Jochim, Daly,Deparis, Hou, Lassoued. Disclosure Number: YOR820161203
- [3p] Reputation Protector: Social Media post Analysis for Protecting Social Reputation, Ganguly, Bonin, Gleize, Tommasi, Hou
- [4p] Automatic Pronunciation Correction for Language Learning, Jochim, Bonin, Gleize, Tommasi.
- [5p] Causal Search Engine: retrieving news and potential related events, Bonin, Jochim, Ganguly, Tommasi

Edited Volumes

- [1] Multimodal Analyses Enabling Artificial Agents in Human-Machine Interaction. Proceedings of MA3HMI 2014, satellite workshop of Interspeech 2014. Böck, Bonin, Campbell, Poppe editors. Springer. In press. ISBN: 978-3-319-15556-2.
- [2] Special Issue: From multimodal analysis to real-time interactions with virtual agents, *Journal of Multimodal User Interfaces* (2014), Poppe, Boeck, Bonin, Campbell, de Kok, Traum editors. 8(1), 2014. ISSN=1783-7677
- [3] Joint Proceedings of the IVA 2012 workshops: MA3 and RCVA (2012). Böck, Bonin, Campbell, Edlund, De Kok, Poppe, Traum: editors. ISBN: 978-3-940961-83-9.

Journals

- [4] Alessandro Vinciarelli, Anna Esposito, Elisabeth Andre, Francesca Bonin, Mohamed Chetouani, Jeff Cohn, Marco Cristani, Ferdinand Fuhrmann, Elmer Gilmartin, Zakia Hammal, Dirk Heylen, René Kaiser, Maria Koutsombogera, Alexandros Potamianos, Steve Renals, Giuseppe Riccardi, Albert Ali Salah. *Open Challenges in Modeling, Analysis and Synthesis of Human Behaviour in Social Interactions*, accepted in **Journal of Cognitive Computation**. March 2015
- [5] Francesca Bonin, Nick Campbell, Carl Vogel, *Time for laughter*, **Knowledge-Based Systems**, Volume 71, November 2014, Pages 15-24, ISSN 0950-7051.
- [6] Ronald Poppe, Ronald Böck, Francesca Bonin, Nick Campbell, Ivan A. de Kok and David Traum *From multimodal analysis to real-time interactions with virtual agents*. **Editorial introduction Journal on Multimodal User Interfaces**, 8(1):1-3, 2014
- [7] Asif Ekbal, Francesca Bonin, Sriparna Saha, Egon Stemle, Eduard Barbu, Fabio Cavulli, Christian Girardi, and Massimo Poesio, *Rapid Adaptation of NE Resolvers for Humanities Domains using Active Annotation*, in **Journal for Language Technology and Computational Linguistics** (JLCL), 26(2):39–51, 2011.
- [8] Francesca Bonin, Felice Dell’Orletta, Giulia Venturi, Simonetta Montemagni Singling out Legal Knowledge from World Knowledge: An NLP-based Approach. In: **Informatica e Diritto. Rivista Internazionale** diretta da Costantino Ciampi, vol. XXXVI annata -Seconda Serie -Vol. XIX (1-2) pp. 217 – 232. Edizioni Scientifiche Italiane S.p.A

International Conferences and Workshops

- [9] Yufang Hou, Charles Jochim, Martin Gleize, Francesca Bonin, Debasis Ganguly: **TDMSci: A Specialized Corpus for Scientific Literature Entity Tagging of Tasks Datasets and Metrics**. CoRR abs/2101.10273 (2021)
- [10] Khalid Al Khatib, Yufang Hou, Henning Wachsmuth, Charles Jochim, Francesca Bonin, Benno Stein: **End-to-End Argumentation Knowledge Graph Construction**. **AAAI 2020**: 7367-7374
- [11] Suchana Datta, Debasis Ganguly, Dwaipayan Roy, Derek Greene, Charles Jochim, Francesca Bonin: **Overview of the Causality-driven Adhoc Information Retrieval (CAIR) task at FIRE-2020**. FIRE 2020: 14-17

- [12] Francesca Bonin, Martin Gleize, Ailbhe Finnerty, Candice Moore, Charles Jochim, Emma Norris, Yufang Hou, Alison J. Wright, Debasis Ganguly, Emily Hayes, Silje Zink, Alessandra Pascale, Pol Mac Aonghusa, Susan Michie: **HBCP Corpus: A New Resource for the Analysis of Behavioural Change Intervention Reports**. **LREC 2020**: 1967-1975
- [13] Suchana Datta, Debasis Ganguly, Dwaipayan Roy, Francesca Bonin, Charles Jochim, Mandar Mitra: **Retrieving Potential Causes from a Query Event**. **SIGIR 2020**: 1689-1692
- [14] Yufang Hou, Charles Jochim, Martin Gleize, Francesca Bonin, Debasis Ganguly: **Identification of Tasks, Datasets, Evaluation Metrics, and Numeric Scores for Scientific Leaderboards Construction**. **ACL (1) 2019**: 5203-5213
- [15] Shai Erera, Michal Shmueli-Scheuer, Guy Feigenblat, Ora Peled Nakash, Odellia Boni, Haggai Roitman, Doron Cohen, Bar Weiner, Yosi Mass, Or Rivlin, Guy Lev, Achiya Jerbi, Jonathan Herzig, Yufang Hou, Charles Jochim, Martin Gleize, Francesca Bonin, David Konopnicki **A Summarization System for Scientific Documents**. **EMNLP (2019)**
- [16] Charles Jochim, Francesca Bonin, Roy Bar-Haim and Noam Slonim **SLIDE - a Sentiment Lexicon of Common Idioms**. **LREC2018**
- [17] Michele Berlingerio, Francesca Bonin, Towards a music-language mapping. **LREC2018**
- [18] Léa A. Deleris, Debasis Ganguly, Killian Levacher, Martin Stephenson, Francesca Bonin: **Decision Conversations Decoded**. **NAACL-HTL (Demonstrations) 2018**: 91-95
- [19] Léa A. Deleris, Francesca Bonin, Elizabeth Daly, Stéphane Deparis, Yufang Hou, Charles Jochim, Yassine Lassoued, Killian Levacher: **Know Who Your Friends Are: Understanding Social Connections from Unstructured Text**. **NAACL-HTL (Demonstrations) 2018**: 76-80
- [20] Francesca Bonin, Nick Campbell and Carl Vogel, The discourse value of social signals at topic change moments, Proceedings of the 16th Annual Conference of the International Speech Communication Association (**INTERSPEECH 2015**), Dresden, Germany, September 6-10, 2015, 2015, 1967-1971
- [21] Gilmartin, Emer, Emer Gilmartin, Francesca Bonin, Loredana Cerrato, Carl Vogel, Nick Campbell. "What's the game and who's got the ball? genre in spoken interaction." **2015 AAAI Spring Symposium Series**. 2015.
- [22] Francesca Bonin, Jose San Pedro and Nuria Oliver, *A Context-Aware NLP Approach For Noteworthiness Detection in Cellphone Conversations*. In proceedings of **COLING 2014**, Dublin, Ireland, August 2014, pp. 25-36.
- [23] Noor Alhusna Madzlan, JingGuang Han, Francesca Bonin and Nick Campbell. *Automatic Recognition of Attitudes in Video Blogs - Prosodic and Visual Feature Analysis*. In Proceedings of **INTERSPEECH 2014**, Singapore, Singapore. September 2014, pp. 1826-1830.
- [24] Noor Alhusna Madzlan, Jingguang Han, Francesca Bonin and Nick Campbell, *Towards Automatic Recognition of Attitudes: Prosodic Analysis of Video Blogs*. In Proceedings of **SPEECH PROSODY 2014**, Dublin, Ireland, pp.91-94
- [25] Francesca Bonin, Carl Vogel; Nick Campbell *Social sequence analysis: temporal sequences in interactional conversations*, **Cognitive Infocommunications, CogInfoCom, 2014 IEEE**, vol., no., pp.403,406, 5-7 Nov. 2014
- [26] Ans Alghamdi, Francesca Bonin, Asif Ekbal, Sriparna Saha, Fabio Cavulli, Sara Tonelli, and Massimo Poesio, *Active Expert Learning for the Digital Humanities*, **Semantic technologies for research in the humanities and social sciences workshop, STRIX 2014**. Gothenburg, Sweden.

- [27] Francesca Bonin, Emer Gilmartin, Carl Vogel, Nick Campbell, *Topics for the future: Genre differentiation, annotation and linguistic content integration in interaction analysis*, **Roadmapping the Future of Multimodal Interaction Research including Business Opportunities and Challenges workshop. ICMI 2014**, Istanbul, Turkey
- [28] Emer Gilmartin, Francesca Bonin, Nick Campbell, Carl Vogel. *Exploring the Role of Laughter in Multiparty Conversation*, In Proceedings of the **SEMDIAL 2013** (DialDam), Amsterdam, Netherlands, December 2013, pp 191-193.
- [29] Emer Gilmartin, Francesca Bonin, Carl Vogel and Nick Campbell. *Laughter and Topic Transition in Multiparty Conversation*, Proceedings of the **SIGDIAL 2013**, August 2013, Metz, France, pp.304-308.
- [30] Francesca Bonin, Celine De Looze, Sucheta Ghosh, Emer Gilmartin, Carl Vogel, Anna Polychroniou, Hugues Salamin, Alessandro Vinciarelli and Nick Campbell, *Investigating fine temporal dynamics of prosodic and lexical accommodation*. Proceedings of **INTERSPEECH 2013**, 26-29 August 2013, Lyon, France, pp. 539-543.
- [31] Francesca Bonin, Nick Campbell, and Carl Vogel. *Laughter and topic changes: Temporal distribution and information flow*. In **Cognitive Infocommunications (CogInfoCom), 2012 IEEE 3rd International Conference on**, pages 53–58, 2012.
- [32] Francesca Bonin, Nick Campbell, Carl Vogel, *Temporal distribution of laughter in conversation*, in Proceedings of the Third Interdisciplinary Workshop on Laughter and other Non-Verbal Vocalisations in Speech, October 2012, Dublin, Ireland, pp: 25-26.
- [33] Francesca Bonin, Ronald Böck and Nick Campbell, *How do we react to context? Annotation of individual and group engagement in a video corpus*. In Proceedings of the **CBAR Workshop, SocialCom 2012**, September 2012, Amsterdam, The Netherlands, pp: 899-903.
- [34] Francesca Bonin, Fabio Cavulli, Massimo Poesio, and Egon W. Stemle, *Annotating Archaeological Texts: An Example of Domain-Specific Annotation in the Humanities*, in Proceedings of the **Sixth Linguistic Annotation workshop, ACL 2012**, Jeju, Republic of Korea, 134-138.
- [35] Massimo Poesio, Eduard Barbu, Francesca Bonin, Fabio Cavulli, Asif Ekbal, Egon Stemle, and Christian Girardi, *The Humanities Research Portal: Human Language Technology Meets Humanities Publication Archives*, in Proceedings of **Supporting Digital Humanities: Answering the unaskable, SDH2011**, Copenhagen, DK.
- [36] Francesca Bonin, Felice Dell'Orletta, Giulia Venturi, and Simonetta Montemagni. *Contrastive filtering of domain-specific multi-word terms from different types of corpora*. MWE 2010 workshop, In 23rd International Conference on Computational Linguistics, **COLING 2010** p. 77. 2010.
- [37] Francesca Bonin, Felice Dell'Orletta, Simonetta Montemagni, Giulia Venturi. *Lessico settoriale e lessico comune nell'estrazione di terminologia specialistica da corpora di dominio*. In: **SLI-2010 - XLIV Congresso Internazionale di Studi della Società di Linguistica Italiana** (Viterbo, Università degli Studi della Toscana, 27-29.
- [38] Francesca Bonin, Felice Dell'Orletta, Giulia Venturi, Simonetta Montemagni *Singling out Legal Knowledge from World Knowledge. An NLP-based approach*. In Proceedings of **LOAIT 2010 - the 4th Workshop on Legal Ontologies and Artificial Intelligence Techniques** (European University Institute, Fiesole, Florence, Italy, July 7th 2010), pp. 39 - 50. Enrico Francesconi, Simonetta Montemagni, Piercarlo Rossi, Daniela Tiscornia (eds.). CEUR, 2010.
- [39] Francesca Bonin, Felice Dell'Orletta, Simonetta Montemagni, Giulia Venturi *A Contrastive Approach to Multi-word Extraction from Domain-specific Corpora*. In Proceedings of **LREC'10 - Seventh International Conference on Language Resources and Evaluation** (Valletta, Malta, 17-23 May 2010), pp. 3222 - 3229.

- [40] Raffaella Bernardi, Francesca Bonin, Diego Calvanese, Domenico Carbotta and Camilo Thorne, *English Querying over Ontologies: E-QuOnto*, R. Basili and M.T. Pazienza (Eds.): **AI*IA 2007**, LNAI 4733, pp. 170-181, 2007. Springer-Verlag Berlin Heidelberg 2007.