

# Marco Guerini, PhD

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## Short Bio

I am a researcher in Computational Linguistics and since 2021 head of the Language and Dialogue Technologies group at Fondazione Bruno Kessler (FBK). I work on persuasive communication, sentiment analysis and social media. In recent years my research has focused on the development of AI technologies to support counter narrative generation to fight online hate speech. I graduated in Philosophy and received my Ph.D. in Information and Communication Technologies in March 2006 from the University of Trento. I am author of several scientific publications, published in top-level conference proceedings and international journals. My research work includes the participation in EU funded projects and program committee membership at international conferences. My research has been featured on international magazines and newspapers, such as *Wall Street Journal*, *MIT Technology Review*, *Harvard Business Review*, *Wired*.

## Education

- (2006) PhD in "Information and communication Technology" University of Trento, Dept. of Information Engineering and Computer Science, Italy. Dissertation title: "Persuasion Models for Multimodal Message Generation". Advisor: Oliviero Stock. Co-advisor: Massimo Zancanaro.
- (2003) Summer school "Second Americas' school on agents and multiagent systems" (SASAMAS). Acapulco, Mexico.
- (2001) "Laurea" degree *summa cum laude* in Philosophy at the University of Siena. Thesis title: "La persuasione dal punto di vista cognitivo e computazionale" (Persuasion from a cognitive and computational point of view).

## Scientific Experience

- (2021-present) Head of Language and Dialogue Technologies group at FBK.
- (2015-2020) Researcher at FBK.
- (2019) Visiting researcher at Université Côte d'Azur, Inria, France in June 2019.
- (2011-2015) Researcher at Trento-Rise
- (2008-2011) Junior Researcher at FBK
- (2001-2007) Research Consultant at ITC-Irst
- (2005-2006) Visiting researcher at *Haifa University, Dept. of Human Services*, in May 2005 and February 2006.
- (2001-2007) Visiting researcher, on various occasions, at the *Institute of Cognitive Sciences and Technologies (ISTC – CNR)* in Rome.

## Projects

- *AI4TRUST* - EU-funded Project. Task: Responsible for the development of misinformation countering tool. (2023-2025)
- *PRECRISIS* - EU-funded Project. Task: Responsible for the development of crisis communication management tool. (2023-2025)
- *Hatometer* - EU-funded Project. Task: Responsible for the development of the counter narrative suggestion tool. (2018-2019)
- *Conversational Banking Front-end (CBF)* - EIT funded project. Task: WP-leader for developing the dialogue module. (2018)
- *Product Title Enhancement* - eBay funded project. Task: Project Responsible. (2016-2017)
- *PerTe, Persuasive Technologies* – Trento-Rise project. Tasks: research activity. (2012-

2015)

- CORPS project - collaboration with the *Center for the Evaluation of Language and Communication Technologies*. Task: Scientific coordinator (2010-2011)
- Intelligent technologies for cultural visits and mobile education – FIRB project. Tasks: research activity, web portal development (2008-2011)
- HUMAINE - EU Network of Excellence. Tasks: research activity, preparation of project reports and deliverables, workshops organization (2004-2007)
- PEACH project – Trento province funding. Tasks: research activity (2002-2005)
- TICCA project – Trento province funding. Tasks: research activity (2001-2004)

## **Seminars Lectures**

- Keynote talk at ArgMining workshop, December 2020. Title: “Counter Narrative generation against online hate speech, data and strategies”.
- Seminar at *Language Technology Group, Department of Information and Communication Sciences, University of Groningen*, October 2020. Title: “Generating Counter Narratives against Online Hate Speech”.
- Invited Speaker at *1st AI IFIP Forum ‘AI and future society’*, May 2019, Wien. Title: “Conversational Agents and Societal Impact”.
- Seminar at *Istituto di Linguistica Computazionale* in Pisa, February 2019. Title: “Persuasive Natural Language Processing: from web advertising to political speeches and virality in social networks”.
- Seminar at *reciTAL* startup in Paris, January 2019. Title “Persuasive Natural Language Processing: from web advertising to political speeches and virality in social networks”.
- Seminar at *Telefonica-Digital* in Barcelona, February 2014. Title: "Persuasive Natural Language Processing: from web advertising to political speeches and virality in social networks".
- Invited Speaker at “Big Data and Social Mining”, *Project Management Institute Conference*, November 2012, Milan. Title “Persuasive Language and Big Data”.
- Seminar at *Google Labs* in Zurich, May 2012. Title: “Linguistic style and Content Readability in Social Networks”, “Google AdWords, scientific research and the automatic variations of ads text”.
- Seminar at *Google Labs* in Zurich, October 2011. Title: “Crowdsourcing Persuasive Message Evaluation with Google AdWords”, “Persuasion and Virality in Social Networks”.
- Seminar at *MIT media lab* in Boston, October 2011. Title: “Text Virality in Social Networks”.
- Seminar at *F5 Hit refresh, Code Camp*, July 2012. Title "Persuasion in language and in political speech".
- Seminar at the *University of Manchester*, September 2006. Title: “Ethical Issues for Persuasive Agents”.
  
- Lecture at *University of Trento* – DISI, 2019. “Personalized Conversational Agents”.
- Lecture at *University of Trento* – CIMeC, (2018 and 2019). “Introduction to Conversational Agents” .
- Lecture at *University of Trento* (2012 and 2013). “Persuasiveness and Audience Reactions in Political Speeches”.
- Lecture at *University of Pisa*, October 2012. “Persuasiveness and Audience Reactions in Political Speeches”.
- Lecture at *University of Amsterdam*, June 2011. “Persuasive Natural Language Processing”.

## **Other Scientific Activities**

- Area Chair of Computational Social Science and Cultural Analytics track for the 2023 Annual Meeting of the Association for Computational Linguistics - ACL 2023.
- Area Chair of Resources and Evaluation track for the 2022 Conference on Empirical Methods in Natural Language Processing - EMNLP 2022.
- Area Chair of *Multidisciplinary and COI* track - 16th Conference of the European Chapter of the Association for Computational Linguistics - EACL 2021.

- Area Chair of *Pragmatics and Creativity track* - 7th Italian Conference on Computational Linguistics - CLIC-it, 2020.
- Area Chair of *Pragmatics and Creativity track* - 6th Italian Conference on Computational Linguistics - CLIC-it, 2019.
- Area Chair of *Pragmatics and Creativity track* - 5th Italian Conference on Computational Linguistics - CLIC-it, 2018.
- Sponsor Chair for the 17th International Conference of the Italian Association for Artificial Intelligence (AI\*IA).
- Member of the Faculty Board of the Digital Humanities PhD from University of Genova.
- Member of the Scientific Board of the Journal "Mondo Digitale".
- Co-organizer of the "1st Workshop on Counter Speech for Online Abuse" at the joint Sigdial-INLG 2023
- Co-organizer of the "PoliticiT - Political ideology detection in Italian texts" task at Evalita 2023.
- Co-organizer of the "Natural Language for artificial Intelligence" workshop (NL4AI) editions 2017 and 2018.
- Co-organizer of "Italian DIALogue systems evaluation" (IDIAL) task at Evalita 2018 (a periodic evaluation campaign of Natural Language Processing and speech tools for the Italian language).
- Project reviewer for the Leibniz association – an union of 96 German research institutes - for the 2018 Leibniz Competition funding program.
- Project reviewer for the Science Fund of the Republic of Serbia.
- Reviewer for several conferences and Journals.

### **PhD Students Supervision**

- Helena Bonaldi - University of Trento - PhD supervisor. Her topic of research dialogical models to fight online hate speech.
- Daniela Occhipinti - University of Trento - PhD supervisor. Her topic of research is Profile driven conversational agents.
- Daniel Russo - University of Trento - PhD supervisor. His topic of research is Knowledge driven Misinformation countering.
- Nicolò Penzo - University of Trento - PhD co-supervisor. His topic of research is context aware NLProc.
- Yiling Chung - University of Trento - PhD supervisor. Her topic of research is multilingual conversational agents to fight online hate speech.

### **Selected Publications**

- Bonaldi, H.; Tekiroglu, S.; Guerini, M. "Human-Machine Collaboration Approaches to Build a Dialogue Dataset for Hate Speech Countering" Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP), 2022.
- Tekiroglu, S.; Bonaldi, H.; Fanton, M.; Guerini, M. "Using Pre-Trained Language Models for Producing Counter Narratives Against Hate Speech: a Comparative Study". In Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics – Findings. (ACL-findings), 2022.
- Fanton, M.; Bonaldi, H.; Tekiroglu, S.; Guerini, M. "Human-in-the-Loop for Data Collection: a Multi-Target Counter Narrative Dataset to Fight Online Hate Speech". In Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics – long papers (ACL), 2021.
- Chung, Y.; Tekiroglu, S.; Guerini, M. "Towards Knowledge-Grounded Counter Narrative Generation for Hate Speech". In Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics – Findings. (ACL-findings), 2021.
- Leonardelli, E.; Menini, S.; Palmero Aprosio, A.; Guerini, M.; Tonelli, S. "Agreeing to Disagree: Annotating Offensive Language Datasets with Annotators' Disagreement". In Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP). 2021.

- Chung, Y.; Tekiroglu, S.; Tonelli S.; Guerini, M. "Empowering NGOs in Countering Online Hate Messages". *Online Social Networks and Media Journal*, 2021.
- Tekiroglu, S.; Chung, Y.; Guerini, M. "Generating Counter Narratives against Online Hate Speech: Data and Strategies". In *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics – long papers (ACL)*, 2020.
- Scialom, T.; Tekiroglu, S.; Staiano, J.; Guerini, M. "Toward Stance-based Personas for Opinionated Dialogues". In *Proceedings of the of the 2020 Conference on Empirical Methods in Natural Language Processing: Findings. (EMNLP-findings)*, 2020.
- Chung, Y.; Tekiroglu, S.; Guerini, M. "Italian Counter Narrative Generation to Fight Online Hate Speech". In *Proceedings of the Seventh Italian Conference on Computational Linguistics (CLiC-it)*, 2020.
- Chung, Y.; Kuzmenko, E.; Tekiroglu, S.; Guerini, M. "CONAN - COUNTER NARRATIVES through Nichesourcing: a Multilingual Dataset of Responses to Fight Online Hate Speech". In *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics – long papers (ACL)*, 2019.
- Tekiroglu, S.; Magnini, B.; Guerini, M. "FASTDial: Abstracting Dialogue Policies for Fast Development of Task Oriented Agents". In *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (ACL)*, demo paper, 2019.
- Araque, Oscar; Gatti, L.; Staiano, Jacopo; Guerini, M. "DepecheMood++: a Bilingual Emotion Lexicon Built Through Simple Yet Powerful Techniques" in *IEEE Transactions on Affective Computing*. 2019.
- de Souza, J.; Kozielski, Michael; Mathur, Prashant; Chang, Ernie; Guerini, M.; Negri, Matteo; Turchi, M.; Matusov, Evgeny; "Generating E-Commerce Product Titles and Predicting their Quality". In *Proceedings of the 11th International Conference on Natural Language Generation*, 233-243. 2018.
- Gatti, L.; Ozbal, G.; Guerini, M.; Stock, O.; Strapparava, C. "Computer-supported human creativity and human-supported computer creativity in language" in *Computational Creativity, The Philosophy and Engineering of Autonomously Creative Systems*. 2018.
- Mansar, Y.; Gatti, L.; Ferradans, S.; Guerini, M. & Staiano, J. "Fortia-FBK at SemEval-2017 Task 5: Bullish or Bearish? Inferring Sentiment towards Brands from Financial News Headlines". 2017
- Guerini M. & Strapparava C. "Why do urban legends go viral?". *Information Processing & Management*, 52 (1), 163-172. 2016
- Stock O., Guerini M., & Pianesi F. "Ethical Dilemmas for Adaptive Persuasion Systems". In *Proceedings of the Thirtieth AAAI Conference on Artificial Intelligence*. 2016
- Gatti L., Ozbal G., Guerini M., Stock O. & Strapparava C. "Heady-Lines: A Creative Generator Of Newspaper Headlines". In *Companion Publication of the 21st International Conference on Intelligent User Interfaces (IUI '16)*. 2016
- Gatti L., Guerini M. & Turchi M. "SentiWords: Deriving a High Precision and High Coverage Lexicon for Sentiment Analysis". *IEEE Transactions on Affective Computing*. 2015
- Guerini M. & Staiano J. "Deep Feelings: A Massive Cross-Lingual Study on the Relation between Emotions and Virality". In *Proceedings of the 24th International Conference on World Wide Web (WWW)*, 2015.
- Guerini M, Ozbal G. & Strapparava C. "Echoes of Persuasion: The Effect of Euphony in Persuasive Communication". In *Proceedings of the 2015 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL)*, 2015.
- Gatti L., Ozbal G., Guerini M., Stock O. & Strapparava C. "Slogans Are Not Forever: Adapting Linguistic Expressions to the News", In *Proceedings of the 24th International Joint Conference on Artificial Intelligence (IJCAI)*, 2015.
- Staiano J. & Guerini M. "DepecheMood: a Lexicon for Emotion Analysis from Crowd Annotated News". In *Proceedings of the 52th Annual Meeting of the Association for Computational Linguistics (ACL)*, 2014.
- Gatti L., Guerini M., Stock O. & Strapparava C. "Mocking ads through mobile web services". *Computational Intelligence*, 2014.
- Guerini M., Gatti L. & Turchi M. "Sentiment Analysis: How to Derive Prior Polarities from SentiWordNet". In *Proceedings of EMNLP*, 2013.

- Guerini M., Giampiccolo D., Moretti G., Sprugnoli R., & Strapparava C. "The New Release of CORPS: A Corpus of Political Speeches Annotated with Audience Reactions". In *Multimodal Communication in Political Speech. Shaping Minds and Social Action* (pp. 86-98). Springer, 2013.
- Guerini M., Staiano J. & Albanese D. "Exploring Image Virality in Google Plus". In *Proceedings of SocialCom*, 2013.
- Guerini M., Strapparava C. & Stock O. "Ecological Evaluation of Persuasive Messages Using Google AdWords". In *Proceedings of the 50th Annual Meeting of the Association for Computational Linguistics (ACL)*, 2012.
- Guerini M., Pepe A. & Lepri B. "Do Linguistic Style and Readability of Scientific Abstracts Affect their Virality?". In *Proceedings of the Sixth International AAIL Conference on Weblogs and Social Media (ICWSM)*, 2012.
- Gatti L. & Guerini M. "Assessing Sentiment Strength in Words Prior Polarities". In *Proceedings of the International Conference on Computational Linguistics (Coling)*, 2012.
- Guerini M., Stock O., Zancanaro M., O'Keefe D.J., Mazzotta I., de Rosis F., Poggi I., Lim M. Y. & Aylett R. "Approaches to Verbal Persuasion in Intelligent User Interfaces". In P. Petta, R. Cowie and C. Pelachaud (eds.) *The HUMAINE Handbook on Emotion-Oriented Systems Technologies*. Springer, 2011.
- Guerini M. & Stock O. "Intelligent Persuasive Technologies: Prospects for Tourism". *Journal of Information Technology and Tourism*, 12(2): 107-123, 2011.
- Strapparava C., Guerini M. & Ozbal G. "Persuasive Language and Virality in Social Networks". in *Proceedings of Affective Computing and Intelligent Interaction conference (ACII)*, 2011. **Nominee for Best Paper Award.**
- Guerini M., Strapparava C. & Ozbal G. "Exploring Text Virality in Social Networks". In *Proceedings of the Fifth International AAIL Conference on Weblogs and Social Media (ICWSM)*, 2011.
- Guerini M., Strapparava C. & Stock O. "Slanting Existing Text with Valentino". In *Proceedings of IUI2011*, Palo Alto, CA, 2011.
- Guerini M., Strapparava C. & Stock O. "CORPS: A Corpus of Tagged Political Speeches for Persuasive Communication Processing". *Journal of Information Technology & Politics*, 5(1): 19-32, Routledge, 2008.
- Guerini M., Stock O. & Zancanaro M. "A Taxonomy of Strategies for Multimodal Persuasive Message Generation". *Applied Artificial Intelligence Journal*, 21(2): 99-136, 2007.
- Castelfranchi C. & Guerini M. "Is it a Promise or a Threat?". *Pragmatics & Cognition Journal*, 15(2): 277-311, 2007.
- Stock O., Guerini M. & Zancanaro, M. "Interface Design and Persuasive Intelligent User Interfaces". In S. Bagnara and G. Crampton Smith (eds.) *The Foundations of Interaction Design*, Lawrence Erlbaum Publishing Co., Hillsdale, 2006.

**Spoken Languages**

- Italian (native language)
- English (fluent)

**Computer Science Background:**

- Programming Languages: Python, R-statistics, C++, LISP.
- Good knowledge of Google Analytics and Google AdWords tools.