

PERSONAL INFORMATION



Nicole Novielli

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Dipartimento di Informatica - via Orabona 4, 70125 – Bari (BA)

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<https://collab.di.uniba.it/nicole/>

Date of birth 30/04/1982, Nationality: Italian

Total number of citations: 2262 (Google Scholar) / 1225 (Scopus)

H-index: 25 (Google Scholar) / 21 (Scopus)

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	<input type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input checked="" type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

05 Jun 2019 - present

Ricercatore a tempo determinato (RTD-b) – INF/01

Università degli Studi di Bari Aldo Moro, Dipartimento di Informatica

Abitazione Scientifica Nazionale per il ruolo di:

- Professore di **I fascia** (INF/01), Settore Concorsuale: 01/B1 – INFORMATICA, achieved on 19/04/2021 (VI quadrimestre, ASN 2018-20)
- Professore di **II fascia** (INF/01), Settore Concorsuale: 01/B1 – INFORMATICA, achieved on 10/04/2017 (I quadrimestre, ASN 2016-18)

Dr. Nicole Novielli is a member of the Collaborative Software Development (COLLAB, <https://collab.di.uniba.it/>) Group at the University of Bari. The main mission of the COLLAB Lab is to study human factors in software engineering, global software development, online communities, and software engineering for AI-enabled systems. The research group is composed of three professors, two PhD students, and two research assistants.

Nicole Novielli's *research interests* are in the areas of social computing and software engineering. She is broadly interested in how to design, implement, and evaluate machine-learning classifiers to recognize affective and cognitive states in computer-supported cooperative work, software engineering, and human-computer interaction. In particular, she focuses on emotion AI based on natural language processing and biometrics analysis, which she studies both in computer-mediated communication and in interaction with applications primarily in human aspects in collaborative software development. Her contributions are mostly in sentiment and emotions in software development, mining software repositories, and program comprehension. In 2016, she started the SEmotion workshop series on Emotion Awareness in Software Engineering co-located with ICSE.

During her research activity she developed competencies in (i) machine learning and data analysis; (ii) information retrieval and natural language processing techniques; (iii) mining of software repositories, (iv) design and execution of different types of empirical studies, including case studies and controlled experiments, (v) labeling and assessing the quality of data for machine learning studies.

Feb 2021 - present

Co-Founder and Chief Scientist di PeoplewareAI

Spin Off of the University of Bari Aldo Moro (<https://www.peopleware.ai/>)

Sept 2015 – Jun 2019

Ricercatore a tempo determinato (RTD-a) – INF/01

Università degli Studi di Bari, Dipartimento di Informatica

Jun 2014 – Jun 2015

Postdoc (INF/01 – ING-INF/05)

Università degli Studi di Bari, Dipartimento di Informatica

Oct 2012 – Oct 2013

Postdoc (INF/01 – ING-INF/05)

Università degli Studi di Bari, Dipartimento di Informatica

Mar 2010 – Mar 2012

Postdoc (INF/01 – ING-INF/05)

Università degli Studi di Bari, Dipartimento di Informatica

EDUCATION AND TRAINING

Jan 2007 – Dec 2009

Ph.D. in Computer Science

Università degli Studi di Bari Aldo Moro (defense date: May 7 2010)

Thesis title: 'Lexical Semantics of Dialogue Acts'

Sept 2006	Master Degree in Computer Science (Laurea Specialistica in Informatica) Università degli Studi di Bari Aldo Moro, Thesis title: 'Riconoscimento automatico di stati emotivi in dialoghi persuasivi'	110/110 magna cum laude
Jul 2004	Laurea in Informatica e Comunicazione Digitale Università degli Studi di Bari Aldo Moro, Thesis title: 'Un linguaggio di mark-up per l'annotazione di stati mentali, in dialoghi persuasivi'	110/110 magna cum laude

RESEARCH PROJECTS

With Leadership Roles

August 2019 - present **PRIN 2017 'Empathy' – Responsabile Unità di Ricerca**
Associated Investigator – Coordinator of the Research Unit of the University of Bari (Unit5) – project 'EMPATHY - Empowering People in Dealing with Internet of Things Ecosystems' funded by MIUR, call: PRIN 2017

Sept 2015 – Sept 2018 **SIR 2014 'Emoquest' – Principal Investigator**
Principal Investigator del Progetto "EmoQuest - Investigating the Role of Emotions in Online Question & Answer Sites" – Funded by MIUR, call: SIR 2014 (Scientific Independence of young Researchers), accept. rate <3%

Grants for Research and technology transfer

Winner of the following competitive calls: *SIR 2014* (Principal Investigator), *PRIN 2017* (Associated Investigator), *Future in Research*, Regione Puglia (Principal Investigator), *Valore Assoluto 2012*, business plan competition, Camera di Commercio di Bari, *Principi Attivi 2012*, business plan competition, Regione Puglia

COMMUNITY SERVICE

Keynote

- International conferences
 - QUATIC 2022 – 15th Int'l. Conf. on the Quality of Information and Communication Technology,
- International workshops
 - ICSE 2020 Student Mentoring Workshop – Invited talk,
 - SEmotion 2020 Workshop (co-located with ICSE 2020)
 - AffectRE'20 Workshop (co-located with RE'20)
 - NLP4RE Workshop (co-located with REFSQ 2022)
- Panel
 - DIGITALMeet 2021 – "Migliorare i servizi ai clienti con il Sentiment Analysis", Università degli Studi di Padova, Oct 2021, Invited Panelist

Organization of international conferences and workshops

International conferences

- PC Co-Chair:
 - MSR 2022 (Ranking CORE: A, GII-GRIN-SCIE: A) – Main track
 - SANER 2023: (Ranking CORE: A) – Main track
- Track Co-Chair:
 - ICSE 2023: Posters (CORE: A*, GII-GRIN-SCIE: A++)
 - ICPC 2021 - Replication and Negative Results (CORE: A)
 - ICGSE/ICSSP 2021 – Doctoral track
 - ICSME 2020 New Ideas (CORE: A, GII-GRIN-SCIE: A)
 - SANER 2020 - Late Breaking Ideas track (CORE: A)
 - MSR 2019 Data Showcase (CORE: A, GII-GRIN-SCIE: A)
 - CLiC-it 2017 - Area chair per 'NLP for Web and Social Media' per CLiC-it 2017
- General Co-Chair:
 - SSBSE 2021 (CORE: B)
 - SSBSE 2020 (CORE: B)
- Publicity team:
 - ICSE 2022 (CORE: A*, GII-GRIN-SCIE: A++)
 - MSR 2020 (Ranking CORE: A, GII-GRIN-SCIE: A)
 - ICGSE 2013
- Local organizing team:
 - CLiC-it 2019, the 6th Italian Conference on Computational Linguistics

International workshops and evaluation campaigns

- Co-Chair:
 - EVALITA 2018, the 6th evaluation campaign of NLP and speech tools for Italian
 - DocGen2 – Challenge – 2nd Software Documentation Generation Challenge, co-located with ICSME '20
 - NL4AI 2019, The 3rd Workshop on Natural Language for Artificial Intelligence, co-located with AIXIA
 - AffectRE, the First International Workshop on Affective Computing for Requirements Engineering, co-located with the 26th IEEE Int'l. Requirements Engineering Conference (RE 2018)
 - Emotions@AISB 2018 – Symposium on Emotion Modeling and Detection in Social Media and Online Interaction, part of the 2018 Convention organised by the Society for the Study of Artificial Intelligence and Simulation of Behaviour
 - SENTIPOLC at EVALITA 2016 co-organizer - Task di Sentiment Analysis SENTiment POLarity Classification, co-locato con CLiC-It 2016

In 2016 I started the SEmotion workshop series co-located with ICSE

- SEmotion 2017: the Second International Workshop on Emotion Awareness in Software Engineering
- SEmotion 2016 co-chair, the First International Workshop on Emotion Awareness in Software Engineering

INSTITUTIONAL RESPONSIBILITIES

- a.a. 2021/2022 **Member of Board** - Dottorato Nazionale in Intelligenza Artificiale, XXXVII ciclo www.phd-ai.it
- a.a. 2020/2021 **Member of Board** - Dottorato Interuniversitario in Industria 4.0 (DI4.0), XXXVI ciclo
- present **Member of the GEV 1** (Scienze matematiche e informatiche) committee for the VQR 2015-2019.
- present **Member of the didactic committee** of the School of Sciences ('Commissione didattica della scuola di Scienze') as a representative for the Master's Degree in Data Science of the University of Bari.

PHD TEACHING AND SUPERVISION

- 2017-2019 **Co-supervisor** – Dr. Daniela Girardi Dottorato di Ricerca di Informatica e Matematica, Università degli Studi di Bari, Cycle XXXIII
- a.a. 2021/2022 **Member of Board** - Dottorato Nazionale in Intelligenza Artificiale, XXXVII ciclo www.phd-ai.it
- a.a. 2020/2021 **Member of Board** - Dottorato Interuniversitario in Industria 4.0 (DI4.0), XXXVI ciclo
- 2017-2019 **Co-supervisor** – Dr. Daniela Girardi Dottorato di Ricerca di Informatica e Matematica, Università degli Studi di Bari, Cycle XXXIII
- Teaching in Italy and abroad**
- International summer schools
 - International Summer School on Software Engineering SIESTA 2019, 3-6 September, Termoli, Italy Seminar on: 'Natural Language Processing in Software Engineering' rivolto ai dottorandi iscritti alla scuola <https://siesta.si.usi.ch/2019/schedule>
 - Teaching
 - University of Bari: 'Emotion Awareness in Social Computing' (2 cfu) - Dottorato di Informatica e Matematica XXXII Cycle, Proff: Dr. Nicole Novielli e Dr. Fabio Calefato.
 - University of Bari: 'Emotion recognition using non-invasive biometrics' (2 cfu) - Dottorato Nazionale in Intelligenza Artificiale
 - University of Oulu, Finland: (dal 04-04-2017 al 07-04-2017) 'Affect detection in the social programmer ecosystem' - Doctoral Degree programme 'Information Processing Science')
 - Eindhoven University of Technology, Netherlands: 'Affect detection in the social programmer ecosystem' for Ph.D. and Master students
- a.a. 2019/2020
- a.a. 2021/2022
Apr, 2017
- Nov, 2016

PUBLICATIONS

best and most relevant
in the last 10 years

- D. Girardi, F. Lanubile, N. Novielli, Alexander Serebrenik, "Emotions and Perceived Productivity of Software Developers at the Workplace", *IEEE Transactions on Software Engineering*, 2021, doi: 10.1109/TSE.2021.3087906
- B. Lin, N. Cassee, A. Serebrenik, G. Bavota, N. Novielli, M. Lanza "Opinion Mining for Software Development: A Systematic Literature Review". *IEEE Transactions on Software Engineering and Methodology*, in press
- N. Novielli, F. Calefato, F. Lanubile, A. Serebrenik, "Assessment of Off-the-Shelf SE-specific Sentiment Analysis Tools: An Extended Replication Study". *Empirical Software Engineering*, DOI: DOI: 10.1007/s10664-021-09960-w
- F. Ebert, F. Castor, N. Novielli, A. Serebrenik, "An Exploratory Study on Confusion in Code Reviews". *Empirical Software Engineering*, Vol. 26, Issue 12, 2021, doi: 10.1007/s10664-020-09909-5
- H. Hata, N. Novielli, S. Baltes, R. Gaikovina Kula, C. Treude, "GitHub Discussions: An Exploratory Study of Early Adoption", *Empirical Software Engineering*, 2021, doi: 10.1007/s10664-021-10058-6
- P. Ralph, S. Baltes, G. Adisaputri, R. Torkar, V. Kovalenko, M. Kalinowski, N. Novielli, S. Yoo, X. Devroey, X. Tan, M. Zhou, B. Turhan, R. Hoda, H. Hata, G. Robles, A. Milani Fard, R. Alkadh, "Pandemic Programming: How COVID-19 affects software developers and how their organizations can help". *Empirical Software Engineering*, 4927–4961 (2020). <https://doi.org/10.1007/s10664-020-09875-y>
- N. Novielli, F. Calefato, F. Lanubile "Love, Joy, Anger, Sadness, Fear, and Surprise - SE Needs Special Kinds of AI: A Case Study on Text Mining and SE". *IEEE Software*, vol. 37(3), pp. 86-91, DOI: 10.1109/MS.2020.2968557
- F. Calefato, F. Lanubile, N. Novielli (2019) "An Empirical Assessment of Best-Answer Prediction Models in Technical Q&A Sites". *Empirical Software Engineering*. DOI: 10.1007/s10664-018-9642-5
- F. Calefato, F. Lanubile, F. Maiorano, N. Novielli (2018). "Sentiment Polarity Detection for Software Development". *Empirical Software Engineering* 23, 3, pp. 1352-1382, <https://doi.org/10.1007/s10664-017-9546-9>
- V. Basile, N. Novielli, D. Croce, F. Barbieri, M. Nissim, V. Patti (online Nov. 2018). "Sentiment Polarity Classification at EVALITA: Lessons Learned and Open Challenges". *IEEE Transactions on Affective Computing* DOI: 10.1109/TAFFC.2018.2884015
- N. Novielli, C. Strapparava (2013). "The Role of Affect Analysis in Dialogue Act Identification". *IEEE Transactions On Affective Computing*, vol. 4, p. 439-451, ISSN: 1949-3045, doi: 10.1109/T-AFFC.2013.20
- G. Fucci, N. Cassee, F. Zampetti, N. Novielli, A. Serebrenik, M. Di Penta. "Waiting around or job half-done? Sentiment in self-admitted technical debt". In Proc. of 18th Int'l Conf. on Mining Software Repositories (MSR 2021) – DOI: 10.1109/MSR52588.2021.00052
- D. Girardi, N. Novielli, D. Fucci, F. Lanubile. "Recognizing Developers' Emotions while Programming". In Proceedings of the 42th Int'l Conf. on Software Engineering (ICSE 2020) – DOI: <https://doi.org/10.1145/3377811.3380374>
- W. Wang, D. Arya, N. Novielli, J. Cheng, J. Guo. "ArguLens: Anatomy of Community Opinions On Usability Issues Using Argumentation Models". In Proceedings of CHI '20 – Conference on Human Factors in Computing Systems April 25-30, 2020 – DOI: <https://doi.org/10.1145/3313831.3376218>

Nicole Novielli, Ph.D.

N. Novielli, F. Calefato, D. Dongiovanni, D. Girardi, F. Lanubile. "Can We Use SE-specific Sentiment Analysis Tools in a Cross-Platform Setting?". In Proceedings of the 17th International Conference on Mining Software Repositories (MSR 2020), October 5-6, 2020 – DOI: <https://doi.org/10.1145/3379597.3387446>

D. Girardi, A. Ferrari, N. Novielli, P. Spoletini, D. Fucci, T. Huichapa. "The Way it Makes you Feel. Predicting Users' Engagement during Interviews with Biofeedback and Supervised Learning". In Proc. of the 28th Int'l. Requirements Engineering Conference (RE'20), August 31 – September 4, 2020 – DOI: 10.1109/RE48521.2020.00016

D. Fucci, D. Girardi, N. Novielli, L. Quaranta, F. Lanubile, "A Replication Study on Code Comprehension and Expertise using Lightweight Biometric Sensors". In Proceedings of the 27th IEEE/ACM Int'l Conf. on Program Comprehension (ICPC 2019), May 25-26, 2019

N. Novielli, D. Girardi, F. Lanubile, "A Benchmark Study on Sentiment Analysis for Software Engineering Research". In Proceedings of the 15th Int'l Conf. on Mining Software Repositories (MSR '18)

Bari, April 19, 2022

Dr. Nicole Novielli

A handwritten signature in black ink that reads "Nicole Novielli". The signature is written in a cursive, flowing style.