Francesca Zerbato

CURRICULUM VITAE ET STUDIORUM

PhD Candidate

Dept. of Computer Science – University of Verona – Strada Le Grazie 15, 37134 Verona, Italy
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Education

October 2015 September 2018	**PhD Program in Computer Science**, *University of Verona*, Italy Advisor: Prof. Carlo Combi Co-Advisors: Prof. Barbara Oliboni, Prof. Mathias Weske Expected to defend in: April 2019
July 2015	**MsC in Computer Science and Engineering**, *University of Verona*, Italy Mark: 110/110 cum laude Thesis: "BPMN-based Design and Comparison of Clinical Pathways and Data for Catheter-related Bloodstream Infections" Advisor: Prof. Carlo Combi Co-Advisor: Prof. Jose M. Juarez
July 2012	**BsC in Bioinformatics**, *University of Verona*, Italy Mark: 101/110 Thesis: "Design and Implementation of a Web-based System for Managing Clinical Nursing Records for Multiple Sclerosis patients" Advisor: Prof. Carlo Combi
July 2009	**High School Diploma**, *Liceo Scientifico "N. Tron"*, Schio (Vicenza), Italy Mark: 100/100

Graduate Study Experiences Abroad

January 2017 September 2017	**Visiting Scholar**, *Hasso Plattner Institute, Potsdam* Business Process Technology Group Reference: Prof. Mathias Weske

Undergraduate Study Experiences Abroad

Oct 2014 Apr 2015	***University of Murcia**, Murcia, Spain* Main activity: junior researcher at the Artificial Intelligence and Knowledge Engineering Laboratory (AIKE) and writing Master Thesis within the WASPSS European funded project Reference: Prof. Jose M. Juarez Program: **Erasmus**+ Program
Aug 2007 Jul 2008	***Luray High School**, Luray, Virginia, United States* Main activity: high school student during the whole senior year

| Program: Cultural Foreign Exchange Student with STS

Research

Research Interests

My main research interests are in the field of information systems and Business Process Management, with particular focus on BPMN process models.

- Investigation of the conceptual design of the data perspective of business processes.
- Representation of temporal constraints and time properties with control patterns. Development of mechanisms for managing temporal violations.
- Modeling of knowledge-intensive processes and process-related decisions.
- Clinical and healthcare process modeling.

Research Experience and Participation in Research Projects

Oct 2015 – present | *University of Verona, Verona, Italy*
Main activity: PhD Candidate

Oct 2014 – Apr 2015 | *University of Murcia, Murcia, Spain*
Main activity: visiting scholar
I took part to the **Wise Antimicrobial Stewardship Support System Project (WASPSS)**, funded by the European Union and the Spanish Ministry of Economics. My work consisted in studying and modeling clinical guidelines by means of process-oriented languages and in creating the bases for the connection of the processes to the local database. My research included the investigation of business process modeling languages, conceptual modeling techniques for workflows and data flows, database design techniques, ontologies in medicine, electronic health records and rule-based modeling techniques.

Publications

Articles in International Journals with Referee

[J.1] Carlo Combi, Barbara Oliboni, Alessandro Zardini, Francesca Zerbato. A Methodological Framework for the Integrated Design of Decision-Intensive Care Pathways–an Application to the Management of COPD Patients. *Journal of Healthcare Informatics Research* 1(2) 157–217, Springer 2017.

Articles in International Conferences with Referee

[C.1] Carlo Combi, Barbara Oliboni, Mathias Weske, and Francesca Zerbato. Conceptual modeling of processes and data: Connecting different perspectives. In *Proceedings of the 37th International Conference on Conceptual Modeling (ER), Xi'an, China, October 22–25, 2018*, LNCS, pages 236–250. Springer, 2018.

[C.2] Roberto Posenato, Francesca Zerbato, and Carlo Combi. Managing decision tasks and events in time-aware business process models. In *Proceedings of the 16th International Conference on Business Process Management (BPM) Sydney, NSW, Australia*, pages 102–118. Springer, 2018.

[C.3] Carlo Combi, Pietro Sala, and Francesca Zerbato. A logical formalization of time-critical processes with resources. In *Proceedings of the 16th International Conference on Business Process Management (BPM Forum) Sydney, NSW, Australia*, (LNCS). Springer, 2018.

[C.4] Carlo Combi, Barbara Oliboni, Mathias Weske, and Francesca Zerbato. Conceptual modeling of inter-dependencies between processes and data. In *ACM Symposium on Applied Computing*, (SAC '18), pages 110–119. ACM, 2018.

[C.5] Bernardo Canovas-Segura, Francesca Zerbato, Barbara Oliboni, Carlo Combi, Manuel Campos, Antonio Morales, Jose M. Juarez, Roque Marin, and Francisco Palacios. A process-oriented approach for supporting clinical decisions for infection management. In *2017 IEEE International Conference on Healthcare Informatics (ICHI)*, pages 91–100. IEEE, 2017.

[C.6] Carlo Combi, Barbara Oliboni, and Francesca Zerbato. Towards dynamic duration constraints for therapy and monitoring tasks. In *Proceedings of Artificial Intelligence in Medicine: 16th Conference on Artificial Intelligence in Medicine, (AIME 2017), Vienna*, pages 223–233. Springer International Publishing, 2017.

[C.7] Carlo Combi, Barbara Oliboni, and Francesca Zerbato. Modeling and handling duration constraints in BPMN 2.0. In *Proceedings of the 32nd Annual ACM Symposium on Applied Computing*, (SAC '17), pages 727 – 734. ACM, 2017.

[C.8] Carlo Combi, Pietro Sala, and Francesca Zerbato. Driving time-dependent paths in clinical BPMN processes. In *Proceedings of the 32nd Annual ACM Symposium on Applied Computing*, (SAC '17), pages 743 – 750. ACM, 2017.

[C.9] Carlo Combi, Barbara Oliboni, Alessandro Zardini, and Francesca Zerbato. Seamless design of decision-intensive care pathways. In *IEEE International Conference on Healthcare Informatics (ICHI 2016)*, pages 35–45. IEEE, 2016.

[C.10] Francesca Zerbato, Barbara Oliboni, Carlo Combi, Manuel Campos, and Jose M Juarez. BPMN-based representation and comparison of clinical pathways for catheter-related bloodstream infections. In *IEEE International Conference on Healthcare Informatics (ICHI 2015)*, pages 346–355. IEEE, 2015.

Articles in International Workshops with Referee

[W.1] Ekaterina Bazhenova, Francesca Zerbato, Mathias Weske. Data-Centric Extraction of DMN Decision Models from BPMN Process Models. In *Business Process Management Workshops*, vol. 308 of Lecture Notes in Business Information Processing, pages 542–555. Springer International Publishing, 2018.

Book Chapters

[B.1] Carlo Combi, Barbara Oliboni, Giuseppe Pozzi and Francesca Zerbato. Architectures and Models for the Enactment of Healthcare Processes. In *Process Modelling and Management for HealthCare*. CRC Press – Taylor and Francis Group.

Currently under revision

[J.2] Ekaterina Bazhenova, Francesca Zerbato, Barbara Oliboni, Mathias Weske. From BPMN process models to DMN decision models. Submitted to *Information Systems*.

[J.3] Carlo Combi, Barbara Oliboni, Francesca Zerbato. A modular approach to the specification and management of duration constraints in BPMN. Submitted to *Information Systems*.

Abstracts in International Conferences without Referee/ Doctoral Consortia

- F. Zerbato, *A Unified Framework for Modeling Processes and Data*. International Conference on Business Process Management (BPM 2017). Participation to peer-reviewed Doctoral Consortium.
- F. Zerbato, *Intertwining Processes and Data – Modeling the Information Perspective of Knowledge-Intensive Healthcare Processes*. 16th Conference on Artificial Intelligence in Medicine (AIME 2017). Participation to peer-reviewed Doctoral Consortium.
- F. Zerbato, *Intertwining Healthcare Knowledge and Processes*. 2016 IEEE International Conference on Healthcare Informatics (ICHI 2016). Participation to Doctoral Consortium.
- F. Zerbato, S. Khan, M. Zucchelli, A. Mendez, C. Granziera, G. Menegaz, *Diffusion MRI compartmental model analysis of DSI data*. 2014 IEEE International Conference on Healthcare Informatics (ICHI 2014).

Honours, Awards, Rewards and Grants

Oct 2016 | **Best Full Paper Award**
C. Combi, B. Oliboni, A. Zardini, F. Zerbato, *Seamless Design of Decision-Intensive Care Pathways*, 2016 IEEE International Conference on Healthcare Informatics (ICHI 2016), Chicago, USA.

Attended Conferences/Workshops and Talks

- "37th International Conference on Conceptual Modeling". Xi'an, China. 22 - 25 October, 2018. *Oral presentation for* [C.1].
- "15th International Conference on Business Process Management". Barcelona, Spain. 10 - 14 September, 2017. *Oral presentation at Doctoral Consortium*.
- "16th Conference on Artificial Intelligence in Medicine – (AIME 2017)". Vienna, Austria. 21-14 June, 2017. *Oral presentation for* [C.6] and at Doctoral Consortium.
- "The 32^{nd}ACM Symposium on Applied Computing – (SAC 2017)". Marrakesh, Morocco. 4 - 7 April, 2017. *Oral presentation for* [C.7].
- "Decision Model and Notation (DMN): Hands-On". Signavio, Berlin. 17 February, 2017.
- "2016 IEEE International Conference on Healthcare Informatics – (ICHI 2016)". Chicago, United States. 4 - 7 October, 2016. *Oral presentation for* [C.9].

- "2015 IEEE International Conference on Healthcare Informatics – (ICHI 2015)". Dallas, United States. 21 - 23 October, 2015. *Poster presentation for* [C.10].
- "Nuvola Rosa: Scienza e Tecnologia: cibo per la mente, energia per il futuro". Milano, 19 - 21 May, 2015.
- "2014 IEEE International Conference on Healthcare Informatics". Verona, Italy. 15 - 17 September, 2014. *Poster presentation for research abstract.*

Editorial and Reviewing Activities

Editorial Office

Jan 2017 present	*Artificial Intelligence in Medicine*, Elsevier Editorial Office - Managing Editor

Reviewing Activities

2018	ACM Symposium on Applied Computing (ACM SAC 2019) – participation to the program committee of the BPMEA track.
2018	Reviewed for IEEE Access.
2017	ACM Symposium on Applied Computing (ACM SAC 2018) – participation to the program committee of the BPMEA track.
2016	ACM Symposium on Applied Computing (ACM SAC 2017).

Conference Chairing Activities

2018	Appointed as Publication co-chair for IEEE International Conference on Healthcare Informatics (ICHI 19).

Teaching

Undergraduate

2016 - 2017	University of Verona - Department of Computer Science Teaching assistant, *Introduction to Programming - Laboratory (Programmazione per Bioinformatica, Laboratorio)* Teaching hours: 30
2015 - 2016	University of Verona - Department of Computer Science Teaching assistant, *Introduction to Programming - Laboratory (Programmazione per Bioinformatica, Laboratorio)* Teaching hours: 48
2015 - 2016	University of Verona - Department of Computer Science Teaching assistant, *Database Systems for Bioinformatics - Laboratory (Laboratorio di Basi di Dati per Bioinformatica)* Teaching hours: 18

Other

November 2016	University of Verona Co-Teaching, *Introduzione alle tecniche di analisi per la reingegnerizzazione di processi organizzativi* Teaching hours: 12
June 2016	University of Verona Co-Teaching, *Metodologia e strumento a supporto dei processi di ateneo* Teaching hours: 8

Advising

Co-Advised MsC Theses

- *Frei Sonia*, "Healthcare Process Simulation", **MsC in Bioinformatics and Medical Biotechnologies**.
  Advisor: prof. Carlo Combi.
- *Lanfreducci Maria Chiara*, "Modellazione in BPMN di processi a supporto della farmacovigilanza", **MsC in Bioinformatics and Medical Biotechnologies**.
  Advisor: prof. Carlo Combi.

Other talks and seminars

- "A conceptual bridge between processes and data". Research update for the BPT group at Hasso Plattner Institute. Potsdam, **18 December, 2017**.
- "Healthcare Process Modeling and Simulation with Signavio". *Health Information Systems*, MsC in Medical Bioinformatics, University of Verona. Verona, **7 December, 2016**.
- "Processes and Data", "Business Process Modeling and Simulation with Signavio". Seminar lectures for the course *Information Systems*, MsC in Computer Science and Engineering, University of Verona. Verona, **10, 24 November 2017**.
- "Processes and Data". Seminar lecture for the course *Trends in BPM research*, MsC in Computer Science, Hasso Plattner Institute. Potsdam, **26 April, 2017**.
- "Process and Decision Modeling in Healthcare Seamless Design of Decision-Intensive Care Pathways". Seminar lecture for the course *Health Information Systems*, MsC in Medical Bioinformatics, University of Verona. Verona, **07 December, 2016**.
- "BPMN 2.0 - Modellazione e simulazione con Signavio". Seminar lecture for the course *Information Systems*, MsC in Computer Science and Engineering, University of Verona. Verona, **November 2016**.
- "BPMN-based design of clinical pathways for catheter-related bloodstream infections". Seminar lecture for the course *Health Information Systems*, MsC in Bioinformatics and Medical Bio-technologies, University of Verona. Verona, **20 January, 2016**.

- "A real BPMN application example." Seminar lecture for the course *Information Systems*, MsC in Computer Science and Engineering, University of Verona. Verona, **4 November, 2015**.

Language Proficiency

Italian: native speaker.

Other languages:

	Comprehension		**Speaking**		**Writing**
	Listening	Reading	Interaction	Production	
English	C1 Advanced	C1 Advanced	C1 Advanced	C1 Advanced	C1 Advanced
Spanish	C1 Advanced	C1 Advanced	B2 Advanced	B2 Advanced	B1 Intermediate
German	A2 Beginner	B1 Intermediate	A2 Beginner	A2 Beginner	B1 Intermediate
French	B1 Intermediate	B1 Intermediate	B1 Intermediate	B1 Intermediate	B1 Intermediate

† Self-evaluation with respect to the Common European Framework of Reference for Languages

Internship Experiences

May 2015 – Sep 2015 | ***Kiratech s.r.l.***
Main activity: Integration, aggregation and analysis of marketing and social network data by means of data analytics tools, such as Elastic Search, Tableau and Splunk. Realization of a web-based application for the management and the evaluation of the retrieved information.
Supervisor: Marco Bizzantino
Co-supervisor: Giulio Covassi
Project: **Digital Angels**, regional funded project

Mar 2014 – Jul 2014 | ***Neuroimaging Lab*** *at University of Verona*
Main activity: Studying cerebral tissues by means of diffusion-based MRI techniques. Extraction of the main parameters described by current models, such as NODDI.
Supervisor: Prof. Gloria Menegaz

Nov 2011 – May 2012 | ***Neurology Department*** *at University Hospital "G.B. Rossi", Verona*
Main activity: Computerization of clinical nurse records for patients affected by multiple sclerosis in order to offer nurses and physicians a sound tool for improving treatment monitoring and data sharing.
Supervisor: Doc. Alberto Gajofatto

October 30, 2018

Francesca Zerbato