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Curriculum vitae

PERSONAL INFORMATION	## Matteo Francia
	📍 Cesena (FC), Italy
	☎ -
	✉ m.francia[at]unibo.it
	🌐 https://www.unibo.it/sitoweb/m.francia/publications
	💬 Skype m.francia[at]unibo.it
	Gender Male | Date of birth 1992 | Nationality Italian

EDUCATION

Nov 3, 2019 - Feb 29, 2020

Visiting Ph.D. student
Affiliation: Data Science Research Group, ITEE, University of Queensland, Australia
Supervisor: Prof. Xiaofang Zhou
Topic: "Privacy on trajectory data"
Description: research on existing privacy models for spatio-temporal data, and on sensitive information conveyed by individual locations

Nov 1, 2017 - Now

Ph.D. student in *Computer Science and Engineering*
Affiliation: Business Intelligence Group, DISI, University of Bologna, Italy
Supervisors: Prof. Matteo Golfarelli, Prof. Stefano Rizzi
Topic: "Augmenting the Know. Pyramid with Unconventional Data and Advanced Analytics"
Description: Research on big data and business intelligence, with a particular focus on (i) spatiotemporal data, and (ii) recommendation and interpretation of OLAP session in hand-free scenarios (e.g., augmented and conversational business intelligence)

May 1, 2017 - Oct 31, 2017

Research fellow
Affiliation: Business Intelligence Group, DISI, University of Bologna, Italy
Supervisor: Prof. Matteo Golfarelli
Topic: "Modeling social behaviors from trajectory data"

Oct 2014 - Mar 2017

Master's degree in *Computer Science and Engineering*
Affiliation: DISI, University of Bologna, Italy
110L/110 - *Graduated cum laude*
Thesis: "A Foundational Library for Aggregate Programming"

Oct 2, 2016 - Dec 2, 2016

Visiting student
Affiliation: University Of Iowa, IA, USA
Topic: "Advancements in the aggregate programming field"
Supervisors: Dr. Jacob Beal, Prof. Mirko Viroli

Sep 16, 2015 - Jul 06, 2016

Erasmus+ student in *Naturwissenschaftliche Informatik*
Affiliation: Universität Bielefeld, Bielefeld, Germany

Sep 2011 - Oct 2014

Bachelor's degree in *Electron., Inform. and Telecommun. Eng.*
Affiliation: DISI, University of Bologna, Italy
110L/110 - *Graduated cum laude*
Thesis: "Apprendimento hebbiano in robotica"

2006 - 2011

High-school diploma in *Informatica Abacus*
Affiliation: I.T.T.S. "Blaise Pascal", Cesena, Italy
100L/100 - *Graduated cum laude*

AWARDS

Jun 28, 2018 "Gianni Bassi" Rotary Award, Best Graduate (School of Eng.&Archit.)
May 20, 2017 "Guido Paolucci" 27th Rotary Award, Best Graduate

CERTIFICATIONS

Apr 2019 ECDL Standard, Full Standard, IT Security

EXPERIENCE

Oct - Dec 2020 — Scientific advisor "Riduzione impatto della maculatura bruna del pero"
Topic: machine learning to uncover conditions favoring the *Stemphylium Vesicarium*

Sep 2019; May 2018 - Jul 2018 — Scientific advisor "Analytics on trajectory data"
Topic: analysis of mobility data flows

May 2019 - Jun 2019 — Lecturer "Relational databases"
IFTS "Big data: new competences for new professions"

Feb 2019 — Lecturer "Big Data and Analytics"
IFTS "Industry 4.0 & IT reference technologies"

Feb-Mar 2019; Feb-Mar, 2018 — Laboratory lecturer "Information Systems"
Bologna Business School, BO, Italy
Master in Finance, Control, Auditing

Sep 2017 — Lecturer "Database and data management"
FSE "Tecnico specializzato in programmazione di applicazioni HMI/SCADA"

RESEARCH ACTIVITY

Publications

[1] Matteo Francia, Danilo Pianini, Jacob Beal, and Mirko Viroli. Towards a foundational API for resilient distributed systems design. In *FAS*W@SASO/ICCAC*, pages 27–32, Tucson, AZ, USA, 2017. IEEE Computer Society.

[2] Matteo Francia, Matteo Golfarelli, and Stefano Rizzi. A similarity function for multi-level and multi-dimensional itemsets. In *SEBD*, volume 2161 of *CEUR Workshop Proceedings*, pages 1–8, Castellaneta Marina, Taranto, Italy, 2018. CEUR-WS.org.

[3] Matteo Francia, Enrico Gallinucci, and Federico Vitali. Map-matching on big data: a distributed and efficient algorithm with a hidden markov model. In *MIPRO*, pages 1238–1243, Opatija, Croatia, 2019. IEEE.

[4] Matteo Francia, Matteo Golfarelli, and Stefano Rizzi. Augmented business intelligence. In *DOLAP@EDBT/ICDT*, volume 2324 of *CEUR Workshop Proceedings*, pages 1–10, Lisbon, Portugal, 2019. CEUR-WS.org.

[5] Matteo Francia, Enrico Gallinucci, and Matteo Golfarelli. Towards conversational OLAP. In *DOLAP@EDBT/ICDT*, volume 2572 of *CEUR Workshop Proceedings*, pages 6–15, Copenhagen, Denmark, 2020. CEUR-WS.org.

[6] Matteo Francia, Enrico Gallinucci, Matteo Golfarelli, and Stefano Rizzi. OLAP querying of document stores in the presence of schema variety. In *SEBD*, volume 2646 of *CEUR Workshop Proceedings*, pages 128–135, Villasimius, Sud Sardegna, Italy, 2020. CEUR-WS.org.

[7] Antoine Chédin, Matteo Francia, Patrick Marcel, Verónika Peralta, and Stefano Rizzi. The tell-tale cube. In *ADBIS*, volume 12245 of *LNCS*, pages 204–218, Lyon, France, 2020. Springer.

[8] Faten El Outa, Matteo Francia, Patrick Marcel, Verónika Peralta, and Panos Vassiliadis. Towards a conceptual model for data narratives. In *ER*, volume 12400 of *LNCS*, pages 261–270. Springer, 2020.

[9] Matteo Francia, Enrico Gallinucci, and Matteo Golfarelli. Social BI to understand the debate on vaccines on the web and social media: unraveling the anti-, free-, and pro-vax communities in Italy. *Social Netw. Analys. Mining*, 9(1):46:1–46:16, 2019.

[10] Matteo Francia, Matteo Golfarelli, and Stefano Rizzi. Summarization and visualization of multi-level and multi-dimensional itemsets. *Inf. Sci.*, 520:63–85, 2020.

[11] Matteo Francia, Matteo Golfarelli, and Stefano Rizzi. A-BI$^+$: A framework for augmented business intelligence. *Inf. Syst.*, 92:101520, 2020.

Research projects

WeLASER (October 2020-September 2023): integrate health approaches and alternatives to pesticide use; pushing to the market a precision weeding system based on high-power laser sources and autonomous vehicles with the objective of eliminating the use of herbicides

Agro.Big.Data.Science (2019-2020): enabling precision farming services through the spatial integration of heterogeneous sources (e.g., satellite images, vector data) in a big data platform

Reviewer

Journals: Data & Knowledge Engineering (DKE; 2020); Artificial Intelligence in Medicine (2017)

Conferences: Big Data Analytics and Knowledge Discovery (DaWaK; 2020), Information and Knowledge Management (CIKM; 2018)

Advisor

Master thesis
2021: Maria Maddalena Mascellaro (TBA), Tommaso Bombardi (TBA);

2020: Luca Semprini (Anonimizzazione incrementale di dati di traiettoria), Federico Naldini (Clustering di traiettorie in ambito big data), Rrok Gjinaj (Progettazione di un sistema di Conversational BI);

2019: Sara Sintoni (Progettazione di un framework per conversational OLAP), Federico Vitali (Map-Matching su piattaforma BigData), Mattia Oriani (Clustering di traiettorie su piattaforma big data), Nicola Santolini (Dati social per la deanonimizzazione di tracce GPS);

2018: Luca Campana (Analisi di dati di traiettoria su piattaforma Big Data

Bachelor thesis
2018: Chiara Forresi (Piattaforma per analisi dati di navigazione);

2017: Nicola Narducci (Mining di pattern rilevati da dati di traiettoria)

OTHER

Exhibition "Magic Boxes" (Mar 14-15, 2014)

MAMbo - Museum Of Modern Art Bologna, Bologna, Italy

"Smart" boxes (Raspberry PIs and Android tablets) capable of self-organization to create different compositions and effects. `http://www-db.disi.unibo.it/MAMbo/mambo/i6/en/`

Supervisor: Prof. Alessandro Ricci

Open source contributions

Business Intelligence Group (UniBO) repository `https://github.com/big-unibo`

`Protelis-Lang` library for aggregate computing `http://github.com/Protelis/Protelis`

Alchemist simulator enhancements `http://github.com/AlchemistSimulator/Alchemist`

Contributor to ArchWiki and Wikipedia

TECHNICAL SKILLS

Big data frameworks	Hadoop, MapReduce, Spark
Geographic information systems	Oracle Spatial, PostGIS, GeoSpark
Programming languages	Java, Scala, Python, C#, Haskell, Prolog, JavaScript, C
DBMS	MySQL, PostGres, PostGis, Oracle, Access, MongoDB
Development techniques	Versioning: Git; Build systems: Gradle; CI: TravisCI

LANGUAGE

Mother tongue
Italian

Other languages

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
English				
C1	C1	C1	B2	B2
German				
B1	b1	A2	A2	A2

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

Jul, 2015
IELTS - European level: C1