Matteo Palmonari (PhD) - Curriculum Vitae

April 2018th

Personal data

E-mail: palmonari@disco.unimib.it

Phone: +390264487904

Website: https://www.unimib.it/matteo-luigi-palmonari

Address: Department of Informatics, Systems and Communication, Viale Sarca, 336, Building U14, 20126, Milan, Italy

Profile

MATTEO PALMONARI is Assistant Professor at the Department of Informatics, Systems and Communication – University of Milano-Bicocca (UNIMIB) since 2011.

He has obtained national scientific qualifications to become associate professor in Computer Science (Abilitazione Scientifica Nazionale for sectors 01/B1 – Informatica and 09/H1 – Sistemi di Elaborazione delle Informazioni).

He received his PhD from UNIMIB in 2006, with a thesis about logic-based modeling of event correlation in pervasive computing systems.

He is member of ITIS Lab, (which will be soon renamed as INSIDE Lab - inside.disco.unimib.it) and collaborates with the MIND Lab at UNIMIB. He has also visited and established long-term collaborations with the ADVIS Lab of University of Illinois at Chicago directed by Isabel F. Cruz.

He is member of the Steering Committee of the Big Data Value Public-Private Partnership (BDV PPP).

Significant professional Leadership

Project Leadership

He is coordinator of EW-Shopp: Supporting Event and Weather-based Marketing Along the Customer Journey, a H2020 project funded within the ICT-14-2016-2017 Big Data PPP: cross-sectorial and cross-lingual data integration and experimentation (Jan 2017- Dec 2019, GA. No 732590). The project has the aim of supporting data analytics at scale by facilitating SMEs in the cross-domain and cross-lingual integration of their corporate data with weather and event data sources. Matteo Palmonari has elaborated the overall conception of the project and leads UNIMIB team in 1) developing ASIA, a semantic annotation tool for the semantic enrichment of tabular data, and 2) extending ABSTAT, a knowledge graph profiling tool that is aimed to support data understanding, quality assessment and vocabulary recommendation.

He is scientific responsible for UNIMIB in euBusinessGraph: Enabling the European Business Graph for Innovative Data Products and Services, a H2020 project funded within the ICT-14-2016-2017 Big Data PPP: cross-sectorial and cross-lingual data integration and experimentation (Jan 2017- June 2019, GA. 732003). The project has the aim of creating a knowledge graph for company data supporting the integration of different data sources and the implementation of different analytic services on top of the graph. Matteo

Palmonari leads UNIMIB team in 1) developing ASIA, a semantic annotation tool that support new data providers in aligning their data to the company graph and 2) extending ABSTAT, a knowledge graph profiling tool that is aimed to support data understanding, quality assessment and vocabulary recommendation.

On years 2013-2014, he has been scientific coordinator of the research team that has developed CuPiD - Culture-based POI Discovery and profiling, a semantic engine built to find Points Of Interest (POIs) in large web data sources and profile them to assist domain experts in assess their culture of origin (e.g., Italian or Indian). The design and development of CuPiD have been funded by Connexun Srl, an innovative start-up based in Milan.

On year 2012 he has been principal investigator (responsabile scientifico) of two small research projects funded by C2T (CONSORZIO PER IL TRASFERIMENTO TECNOLOGICO) on data integration mediated by abstraction and on knowledge graph exploration in the context of data journalism. The latter led to the development of the DaCENA research prototype (www.dacena.org). New results related to DaCENA have been presented upon invitation at SpazioDati in June 2017.

Significant Contributions to Other Research Projects

Matteo Palmonari has lead research activites carried out in the context of different Italian and international research projects he has taken part to. In the SIERA Project (EU FP7, 2011- 2014)**,** he has lead research work on alignment of lexical ontologies in different languages. In the SMART - Services & Meta-services for smART eGovernment project (IT PON-01_00861, 2011-2014) he has lead the work on cross-lingual linking of public government services, which lead to the deploy of the CroSer tool.

He has been contracted as consultant on spatial and temporal data integration topics by University of Illinois at Chicago, for the research project CyberSEES, funded by National Science Foundation (USA, https://www.nsf.gov/awardsearch/showAward?AWD_ID=1331800) and directed by Isabel F. Cruz.

Research Leadership & Student Supervision

Matteo Palmonari is scientific supervisor of Renzo Alva Principle (2017-2018), and has been supervisor of Vincenzo Cutrona (2017), two technicians working on the EW-Shopp and euBusinessGraph H2020 projects. The EW-Shopp has funded a determinate-time researcher position (RTD-A), covered by Michele Ciavotta, who has become a new member of the INSIDE Lab.

Matteo Palmonari has been supervisor of Riccardo Porrini and co-supervisor of four PhD students (Anisa Rula, Blerina Spahiu, Pikakshi Manchanda, and Mamoun Abu Helou – co-supervised by Mustafa Jarrar from Birzeit University). He is currently supervisor of two PhD students, Federico Bianchi and Vincenzo Cutrona.

In 2017, in the PhD program in Computer Science at UNIMIB, he has taught a course titled "Knowledge Graphs and Semantic Data Management: Models, Techniques and Applications".

He has mentored / will mentor international and national students at PhD symposiums of conferences in the (EKAW2014, ESWC2015-2018, AI*IA2018).

Experience of Technological Transfer of Research Results

On years 2012-2016, Matteo Palmonari is among the founder partners of the start-up company MAP-S S.R.L. (R.E.A id: 1349893), whose mission was to develop solutions for information security.

Significant Technical Contributions

Matteo Palmonari research activity has been mainly addressed the intersection of artificial intelligence and data integration topics, with a main focus on semantic information integration and knowledge exploration, and an emphasis both on theory and implementation as further detailed below.

Semantic Information Integration

Since 2010, his research efforts have been devoted to the **Semantic Information Integration** topic with focus on semantic matching methods. He has contributed to **AgreementMaker**, an ontology matching system developed at University of Illinois of Chicago. His main contributions in this context include the alignment of Linked Open Data ontologies, the automatic configuration of matching systems, the design of matching methods with users-in-the-loop. He has also addressed cross-lingual matching methods applied to large lexical ontologies and data linking problems, with the development of **CroSeR** an interactive system for linking entities with short textual descriptions. He has addressed the problem of extracting facets in very large data spaces and annotating them using reference knowledge bases. This and additional work in the eCommerce domain laid the basis for the EW-Shopp project conception. Finally, he one of the main designers of **Twine** (http://twine-mind.cloudapp.net/), a system that performs entity linking on social media streams to support semantic analysis of social media, contributing also to the computational methods on which Twine is based.

Knowledge Exploration

Since 2012, he has investigated knowledge exploration approaches addressing two main research topics. First, ontology-driven knowledge graph summarization methods to support semantic data profiling of large knowledge graphs, which has been proved helpful for different tasks such as data understanding, quality assessment and vocabulary selection. This work led to the development of ABSTAT (abstat.disco.unimib.it), one of the key assets of UNIMIB in the euBusinessGraph and EW-Shopp projects. Second, interactive knowledge graph exploration methods, with a focus on interactive methods to rank semantic associations by estimated interest using interactive exploration methods and machine learning. This work lead to the development of DaCENA (dacena.org), an application to let readers of news and other textual content explore interesting data from knowledge graphs.

Service Modeling & Matchmaking

Until 2014 he has investigated models to represent services and methods for service matchmaking. His main contributions to service modeling include a semantic model to describe and explore eGovernment services and a model to represent policies that capture non-functional service properties. His main contributions to service matchmaking include methods to match service policies, possibly extracted from real-world service descriptions, and methods to aggregate service and data descriptions that match a user query.

Temporal and spatial information

During his PhD work (2003-2006) he has investigated commonsense models for representing spatial information in pervasive computing applications. Also because of this background, he has contributed to more recent work at UNIMIB on temporal information quality in the semantic Web, addressing in particular the problems of studying the relation between information freshness and accuracy, and estimating the temporal validity of RDF facts.

Publications, Bibliometrics and Awards

A list of most recent and selected publications is included as appendix to this CV. For a complete list of pubblications see:

DBLP: https://dblp.uni-trier.de/pers/hd/p/Palmonari:Matteo

Google Scholar: https://scholar.google.it/citations?user=QmrLvqYAAAAJ&hl=it&authuser=1

Bibliometrics: Tot cit.: 487 (Scopus), 925 (Scholar); h-index: 11 (Scopus), 15 (Scholar); i10-index = 30 (Scholar)

Matteo Palmonari has received the following **awards**:

"B. Spahiu, R. Porrini, M. Palmonari, A. Rula, A. Maurino. **ABSTAT: Ontology-driven Linked Data Summaries with Pattern Minimalization.**" received the *Best Paper Award* at the 2nd International Workshop on Summarizing and Presenting Entities and OntologiesSumPre, co-located with ESWC 2016.

"P. Manchanda, E. Fersini, M. Palmonari. **Leveraging Entity Linking to Enhance Entity Recognition in Microblogs.** KDIR 2015" received the best *Best Paper Award* at the 7th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management.

"A. Rula, M. Palmonari, A. N. Ngomo, D. Gerber, J. Lehmann, and L. Buhmann. **Hybrid acquisition of temporal scopes for rdf data**. In ESWC 2014." received the *Best Student Paper Award at* 11th Extended Semantic Web Conference (Anisa Rula was a PhD student under his supervision).

Substantial Professional Contributions

He has served on the committees of several renowned conferences in his field of expertise such as WWW (2018), ISWC (2017-18, ESWC (2014-18), EKAW (2014,16), Web Intelligence (2009-10,12-13,18), SAC (2016-17). He has served as reviewer for outstanding international journals as Semantic Web Journal, Computer Surveys, Transactions on Knowledge and Data Engineering, Information Processing & Management, Information Systems, Data & Knowledge Engineering, Journal of Web Semantics, Transactions on Internet Technology.

He has been co-organizer of four workshops and guest editor of an International Journal of Electronic Governance special issue.

He has served on the committee for the PhD defense of M. L. Mouhoub at the Université Paris-Dauphine.

Recent Publications (2018)

[1] Porrini, R., Palmonari, M., & Cruz, I. F.: **Facet Annotation Using Reference Knowledge Bases**. In *Proceedings of The Web Conference (former WWW)* (pp. 1215-1224). International World Wide Web Conferences Steering Committee. 2018.

[2] Di Noia, T., Magarelli, C., Maurino, A., Palmonari, M., Rula, A.: **Using Ontology-based Data Summarization to Develop Semantics-aware Recommender Systems**. In *Proceedings of ESWC*. LNCS, Springer-Verlag. 2018. To appear.

[3] Di Noia, T., Magarelli, C., Maurino, A., Palmonari, M., Rula, A.: **Using Ontology-based Data Summarization to Develop Semantics-aware Recommender Systems**. In *Proceedings of ESWC*. LNCS, Springer-Verlag. 2018. To appear.

[4] Alva Principe, R.A., Spahiu, B., Palmonari, M., Rula, A., De Paoli, F., Maurino, A.: **ABSTAT 1.0: Compute, Manage and Share Semantic Profiles of RDF Knowledge Graphs**. In *Proceedings of ESWC 2 (Posters & Demo)*. LNCS, Springer-Verlag. 2018. To appear.

[5] Bianchi, F., Soto, M., Palmonari, M., Cutrona, V.: "**Type vector representations from text: An empirical analysis**" in Deep Learning for Knowledge Graphs and Semantic Technologies Workshop, co-located with the Extended Semantic Web Conference, 2018. To appear.

[6] Fersini, E., Manchanda, P., Messina, M., Nozza, D., Palmonari, M.: **Adapting Named Entity Types to New Ontologies in a Microblogging Environment**. Proceedings of the 31st International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems, 2018. To appear.

Selected Publications (until 2017)

Journals

[7] Narducci, F., Palmonari, M., Semeraro, G.: **Cross-lingual link discovery with TR-ESA**. *Inf. Sci.* 394: 68-87 (2017). [IF2016=4.83]

[8] Abu Helou, M., Palmonari, M., Jarrar. M.: **Effectiveness of Automatic Translations for Cross-Lingual Ontology Mapping**. *J. Artif. Intell. Res.* (JAIR) 55: 165-208 (2016). [IF2016=3.18]

[9] Cruz, I. F., Palmonari, M., Loprete, F., Stroe, C., Taheri, A.: **Quality-based model for effective and robust multi-user pay-as-you-go ontology matching**. *Semantic Web* 7(4): 463-479 (2016). [IF2016=2.97]

[10] Riccardo Porrini, Matteo Palmonari, and Giuseppe Vizzari. **Composite match autocompletion (COMMA): a semantic result-oriented autocompletion technique for e-marketplaces**. Web Intelligence and Agent Systems, 12(1): 35-49 (2014).

[11] Cruz, I. F., Palmonari, M., Caimi, F., Stroe, C.: **Building linked ontologies with high precision using subclass mapping discovery**. *Artif. Intell. Rev.*, 40(2):127–145, 2013. [IF2016=2,627]

[12] Panziera, L., Comerio, M., Palmonari, M., De Paoli, F., Batini, C.: **Quality-driven Extraction, Fusion and Matchmaking of Semantic Web API Descriptions**. *J. Web Eng.* 11(3): 247-268 (2012). [IF2016=0,66]

[13] Palmonari, M., Sala, A., Maurino, A., Guerra, F., Pasi, G., Frisoni, G.: **Aggregated search of data and services.** *Information Systems*, Elsevier, Volume 36, Issue 2, pp. 134-150 (2011). [IF2016=2,77]

[14] Mosca, A., Palmonari, M., Sartori, F.: **An Upper-level Functional Ontology to Support Knowledge Management in SMEs-based E-Manufactoring of Mechanical Products.** *Knowledge Engineering Review*, Cambridge University Press. Volume 24 , Issue 3, pp 265-285 (2009). [IF2016=1,51]

[15] Palmonari, M., Viscusi, G., Batini, C. **A Semantic Repository Approach to Improve the Government to Business Relationship**. *Data & Knowledge Engineering*, Elsevier, Vol 65/3 2008, pp 485-511 (2008). [IF2016=1,68]

[16] Bandini, S., Mosca, A., Palmonari, M.: **Commonsense Spatial Reasoning for Information Correlation in Pervasive Computing**. *Applied Artificial Intelligence*, Taylor&Francis, Vol. 21/4-5, pp 405-425 (2007). [IF2016=0,67]

[17] S. Bandini, A. Mosca, M. Palmonari, **Intelligent Alarm Correlation and Abductive Reasoning**. In L. Magnani (guest editor), *Logic Journal of IGPL*, Oxford University Press, Vol. 14., March 2006, pp. 347-362. [IF= 0.320*2009 JCR Science Edition]

Proceedings of Main International Conferences

[18] Federico Bianchi, Matteo Palmonari, Marco Cremaschi, Elisabetta Fersini: **Actively Learning to Rank Semantic Associations for Personalized Contextual Exploration of Knowledge Graphs.** *In proceedings of ESWC (1) 2017*, Springer, pp.120-135. [CORE2018=A]

[19] Vito Walter Anelli, Andrea Calì, Tommaso Di Noia, Matteo Palmonari, Azzurra Ragone: **Exposing Open Street Map in the Linked Data Cloud.** IEA/AIE 2016: 344-355 [CORE2018=B]

[20] Anisa Rula, Matteo Palmonari, Axel-Cyrille Ngonga Ngomo, Daniel Gerber, Jens Lehmann, and Lorenz Buhmann. **Hybrid acquisition of temporal scopes for rdf data**. *In proceedings of ESWC 2014*, Springer, pp. 488-503. [CORE2018=A]

[21] Riccardo Porrini, Matteo Palmonari, and Carlo Batini. **Extracting facets from lost fine-grained categorizations in dataspaces**. In CAISE 2014, 580-594. [CORE2018=A]

[22] Fedelucio Narducci, Matteo Palmonari, and Giovanni Semeraro. **Cross- language semantic retrieval and linking of e-Gov services**. *In proceedings of ISWC 2013*, Springer, pp 130–145. [CORE2018=A]

[23] Daniel Faria, Catia Pesquita, Emanuel Santos, Matteo Palmonari, Isabel F. Cruz, and Francisco M. Couto. **The AgreementMakerLight ontology matching system.** In ODBASE 2013, volume 8185 of Lecture Notes in Computer Science, pages 527–541. Springer, 2013.

[24] C. Tziviskou, M. Palmonari, M. Comerio, and F. De Paoli. **SeDL-C: A language for modeling business terms in service descriptions**. In ICWS 2013. IEEE Computer Society, 2013. [CORE2018=A]

[25] Anisa Rula, Matteo Palmonari, Andreas Harth, Steffen Stadtmüller, Andrea Maurino: **On the Diversity and Availability of Temporal Information in Linked Open Data**. *In proceedings of ISWC (1) 2012*, Springer, pp. 492-507. [CORE2018=A]

[26] Isabel F. Cruz, Alessio Fabiani, Federico Caimi, Cosmin Stroe, Matteo Palmonari: **Automatic Configuration Selection Using Ontology Matching Task Profiling**. *ESWC 2012*: 179-194. [CORE2018=A]

[27] Matteo Palmonari, Marco Comerio, Flavio De Paoli. **Effective and Flexible NFPbased Ranking of Web Services**. *In proceedings of ICSOC 2009,* IEEE Computer Society*,* pp. 546-560*.* [CORE2018=A]

[28] Flavio De Paoli, Matteo Palmonari, Marco Comerio, and Andrea Maurino. **A meta-model for non-functional property descriptions of web services**. *In proceedings of ICWS 2008,* IEEE Computer Society, pp. 393–400. [CORE2018=A]

Milano, 27/04/2018

Palmonari Matteo