



Dr. Pavlos Fafalios

Curriculum Vitae

August 2019

Full name: Pavlos Fafalios
Birth date / place: 14 July 1985 / Chios, Greece
Nationality: Greek
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Military service: Accomplished (Nov. 2008 – Nov. 2009)
Languages: Greek (Mother tongue), English (Mastery C2), French (DEL F 1)

CURRENT POSITION

Postdoctoral researcher at the Information Systems Laboratory of FORTH-ICS (Greece)

WORK EXPERIENCE

June 2019 – Now	<i>Postdoctoral researcher</i> Information Systems Laboratory (ISL), Institute of Computer Science (ICS), Foundation for Research & Technology - Hellas (FORTH), Heraklion, Greece
June 2016 – May 2019	<i>Postdoctoral researcher</i> L3S Research Center, Leibniz University of Hanover, Germany
Dec. 2010 – May 2016	<i>Research assistant, software engineer, graduate fellow</i> Information Systems Laboratory (ISL), Institute of Computer Science (ICS), Foundation for Research & Technology - Hellas (FORTH), Heraklion, Greece

EDUCATION

October 2012 – May 2016 (PhD)	Ph.D., Computer Science Department, University of Crete, Greece <u>Thesis title:</u> “Exploiting Linked Data in Exploratory Search” <u>Thesis supervisor:</u> Assistant Professor Yannis Tzitzikas
February 2010 – July 2012 (MSc)	M.Sc. in Information Systems and E-commerce Technologies, Computer Science Department, University of Crete, Greece <u>Thesis title:</u> “Indexes and Algorithms for Scalable and Flexible Instant Overview Search” <u>Thesis supervisor:</u> Assistant Professor Yannis Tzitzikas <u>Average grade of graduate courses (of both MSc and PhD):</u> 8.72/10.0
September 2003 – June 2009 (Dipl. Eng.)	Engineer's degree in Information and Communication Systems Engineering, School of Engineering, University of the Aegean, Greece <u>Thesis title:</u> “Meta-Seeker: a Retroactive Algorithm for Personalized Information from Multiple Web Search Services” <u>Thesis supervisor:</u> Assistant Professor Ioannis Anagnostopoulos. <u>Degree grade:</u> 7.8/10.0

TEACHING EXPERIENCE

- 2019 | Lecture on "*Stance Detection for Fact-checking*", Course: Web Science, Summer Semester 2019, Leibniz University of Hanover, Distributed Systems Institute, Department of Knowledge-Based Systems, Hannover, Germany
More info: <https://www2.kbs.uni-hannover.de/webscience.html>
- | Organization of Proseminar "*Data Mining*" (together with Prof. Dr. Eirini Ntoutsis), Summer Semester 2019, Leibniz University of Hanover, Distributed Systems Institute, Department of Knowledge-Based Systems, Hannover, Germany
More info: <http://www.kbs.uni-hannover.de/~ntoutsis/proseminar/proseminarSoSe19.html>
- 2010–2016 | Teaching Assistant
Computer Science Department, University of Crete, Heraklion, Greece
Duties: lecturing, supervising, student counseling, preparing exercises and projects, marking
Courses: CS-150 Programming (Spring semester 2009-2010), CS-252 Object-Oriented Programming (Winter semesters 2013-2014, 2014-2015, 2015-2016), CS-351 Information System Analysis and Design (Winter semesters 2010-2011, 2011-2012, 2012-2013), CS-359 Web Programming (Spring semesters 2010-2011, 2012-2013), CS-463 Information Retrieval Systems (Spring semesters 2014-2015, 2015-2016), CS-561 Web Data Management (Spring semester 2013-2014)
More info about the courses:
- https://www.csd.uoc.gr/CSD/index.jsp?content=courses_catalog_&lang=en
- https://www.csd.uoc.gr/CSD/index.jsp?content=pg_courses_catalog_&lang=en

RESEARCH INTERESTS

- Information Indexing and Retrieval
- Web Search; Exploratory Search; Semantic Search
- World Wide Web; Semantic Web; Linked Data
- Data Mining; Data Integration
- Conceptual Modeling; Knowledge Representation
- Cultural Informatics, Digital Libraries; Web Archives

PUBLICATIONS

Journal publications (peer-reviewed)

1. **P. Fafalios**, V. Iosifidis, K. Stefanidis, and E. Ntoutsis, "*Tracking the History and Evolution of Entities: Entity-centric Temporal Analysis of Large Social Media Archives*", International Journal on Digital Libraries, 2018. Springer Berlin Heidelberg. <https://doi.org/10.1007/s00799-018-0257-7>
2. **P. Fafalios**, H. Holzmann, V. Kasturia, and W. Nejdl, "*Building and Querying Semantic Layers for Web Archives (Extended Version)*", International Journal on Digital Libraries, 2018. Springer Berlin Heidelberg. <https://doi.org/10.1007/s00799-018-0251-0>
3. **P. Fafalios** and Y. Tzitzikas, "*Stochastic Re-Ranking of Biomedical Search Results based on Extracted Entities*", Journal of the Association for Information Science and Technology (JASIST), Vol. 68, No. 11 2017. <https://doi.org/10.1002/asi.23877>
4. M. Mountantonakis, N. Minadakis, Y. Marketakis, **P. Fafalios**, Y. Tzitzikas, "*Quantifying the Connectivity of a Semantic Warehouse and Understanding its Evolution over Time*", International Journal on Semantic Web and Information Systems (IJSWIS), Vol. 12, Issue 03 (2016), IGI Global (ISSN: 1552-6283). <https://doi.org/10.4018/IJSWIS.2016070102>

5. Y. Tzitzikas, C. Allocca, C. Bekiari, Y. Marketakis, **P. Fafalios**, M. Doerr, N. Minadakis, T. Patkos, L. Candella, “Unifying Heterogeneous and Distributed Information about Marine Species through the Top Level Ontology MarineTLO”, Program: Electronic library and Information Systems, Special Issue on Application of Metadata and Semantics in Science, Vol. 50, No. 1 (2016), Emerald (ISSN: 0033-0337). <https://doi.org/10.1108/PROG-10-2014-0072>
6. **P. Fafalios**, M. Baritakis and Y. Tzitzikas, “Exploiting Linked Data for Open and Configurable Named Entity Extraction”, International Journal on Artificial Intelligence Tools, Vol. 24, No. 02 (2015), World Scientific (ISSN: 1793-6349). <https://doi.org/10.1142/S0218213015400126>
7. **P. Fafalios** and Y. Tzitzikas, “Type-ahead Exploratory Search through Typo and Word Order Tolerant Autocompletion”, Journal of Web Engineering, Vol. 14, No. 1 & 2 (2015), Rinton Press (ISSN: 1540-9589)
8. **P. Fafalios**, P. Papadakos and Y. Tzitzikas, “Enriching Textual Search Results at Query Time using Entity Mining, Linked Data and Link Analysis”, International Journal of Semantic Computing, Vol. 08, No. 04 (2014), World Scientific (ISSN: 1793-7108). <https://doi.org/10.1142/S1793351X14400170>
9. **P. Fafalios** and P. Papadakos, “Theophrastus: On Demand and Real-Time Automatic Annotation and Exploration of (Web) Documents using Open Linked Data”, Web Semantics: Science, Services and Agents on the World Wide Web, Vol. 29 (2014), Elsevier (ISSN: 1570-8268). <https://doi.org/10.1016/j.websem.2014.07.009>

Conference publications (peer-reviewed)

1. A. Tchechmedjiev, **P. Fafalios**, K. Boland, M. Gasquet, M. Zloch, B. Zapilko, S. Dietze, K. Todorov, “ClaimsKG: A Knowledge Graph of Fact-Checked Claims”, 18th International Semantic Web Conference, Auckland, New Zealand, October 26–30, 2019.
2. M. Gasquet, D. Brechtel, M. Zloch, A. Tchechmedjiev, K. Boland, **P. Fafalios**, S. Dietze, K. Todorov, “Exploring Fact-checked Claims and their Descriptive Statistics”, Demo Paper, 18th International Semantic Web Conference, Auckland, New Zealand, October 26–30, 2019.
3. R. S. João, **P. Fafalios**, and S. Dietze, “Same but Different: Distant Supervision for Predicting and Understanding Entity Linking Difficulty”, 34th ACM/SIGAPP Symposium On Applied Computing. Limassol, Cyprus, April 8-12, 2019.
4. **P. Fafalios** and Y. Tzitzikas, “How Many and What Types of SPARQL Queries can be Answered through Zero-Knowledge Link Traversal?”, 34th ACM/SIGAPP Symposium On Applied Computing. Limassol, Cyprus, April 8-12, 2019.
5. M. Quraishi, **P. Fafalios**, and E. Herder, “Viewpoint Discovery and Understanding in Social Networks”, 10th International ACM Web Science Conference (WebSci'18), Amsterdam, the Netherlands, May 27-30, 2018.
6. **P. Fafalios**, V. Kasturia, and W. Nejdl, “Ranking Archived Documents for Structured Queries on Semantic Layers”, 2018 ACM/IEEE-CS Joint Conference on Digital Libraries (JCDL'18), Fort Worth (Texas, USA), June 3-6, 2018.
7. **P. Fafalios**, V. Iosifidis, E. Ntoutsis, and S. Dietze, “TweetsKB: A Public and Large-Scale RDF Corpus of Annotated Tweets”, 15th Extended Semantic Web Conference (ESWC'18), Heraklion, Crete, Greece, June 3-7, 2018. **Nominated for the “Best Resource Paper” award!**
8. **P. Fafalios**, V. Iosifidis, K. Stefanidis, and E. Ntoutsis, “Multi-aspect Entity-centric Analysis of Big Social Media Archives”, 21st International Conference on Theory and Practice of Digital Libraries (TPDL'17), Thessaloniki, Greece, September 18-21, 2017.
9. **P. Fafalios**, H. Holzmann, V. Kasturia, and W. Nejdl, “Building and Querying Semantic Layers for Web Archives”, 2017 ACM/IEEE-CS Joint Conference on Digital Libraries (JCDL'17), Toronto (Ontario, Canada), June 19-23, 2017. **Nominated for the “Best Paper” award!**

10. **P. Fafalios**, V. Kasturia, and W. Nejdl, "Towards a Ranking Model for Semantic Layers over Digital Archives", Poster paper, ACM/IEEE-CS Joint Conference on Digital Libraries (JCDL'17), Toronto (Ontario, Canada), June 19-23, 2017.
11. **P. Fafalios**, T. Yannakis and Y. Tzitzikas, "Querying the Web of Data with SPARQL-LD", 20th International Conference on Theory and Practice of Digital Libraries (TPDL'16), Hannover, Germany, September 5 -9, 2016.
12. **P. Fafalios** and Y. Tzitzikas, "Entity-based Stochastic Analysis of Search Results for Query Expansion and Results Re-Ranking", Text Retrieval Conference (TREC'15), Gaithersburg, Maryland, USA, November 2015.
13. **P. Fafalios** and Y. Tzitzikas, "SPARQL-LD: A SPARQL Extension for Fetching and Querying Linked Data", Demo paper, 14th International Semantic Web Conference (ISWC'15), Bethlehem, Pennsylvania, USA, October 2015.
14. **P. Fafalios** and Y. Tzitzikas, "Post-Analysis of Keyword-based Search Results using Entity Mining, Linked Data and Link Analysis at Query Time", 8th IEEE International Conference on Semantic Computing (ICSC'14), Newport Beach, California, USA, June 2014.
15. **P. Fafalios** and Y. Tzitzikas, "Configuring Named Entity Extraction through Real-Time Exploitation of Linked Data", 4th International Conference on Web Intelligence, Mining and Semantic (WIMS'14), Thessaloniki, Greece, June 2014.
16. Y. Tzitzikas, N. Minadakis, Y. Marketakis, **P. Fafalios**, C. Allocca, N. Mountantonakis and I. Zidianaki, "MatWare: Constructing and Exploiting Domain Specific Warehouses by Aggregating Semantic Data", 11th Extended Semantic Web Conference (ESWC'14), Anissaras, Heraklion, Greece, May 2014.
17. Y. Tzitzikas, C. Allocca, C. Bekiari, Y. Marketakis, **P. Fafalios**, M. Doerr, N. Minadakis, T. Patkos and L. Candela, "Integrating Heterogeneous and Distributed Information about Marine Species through a Top Level Ontology", 7th Metadata and Semantic Research Conference (MTSR'13), Thessaloniki, Greece, November 2013.
18. **P. Fafalios** and Y. Tzitzikas, "X-ENS: Semantic Enrichment of Web Search Results at Real-Time", Demo paper, 36th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'13), Dublin, Ireland, 27 July - 1 August 2013.
19. **P. Fafalios**, I. Kitsos, Y. Marketakis, C. Baldassarre, M. Salampasis and Y. Tzitzikas, "Web Searching with Entity Mining at Query Time", 5th Information Retrieval Facility Conference (IRFC'12), Vienna, Austria, July 2012.
20. **P. Fafalios**, I. Kitsos and Y. Tzitzikas, "Scalable, Flexible and Generic Instant Overview Search", Demo paper, 21st International Conference on World Wide Web (WWW'12), Lyon, France, April 2012.
21. **P. Fafalios** and Y. Tzitzikas, "Exploiting Available Memory and Disk for Scalable Instant Overview Search", 12th International Conference on Web Information System Engineering (WISE'11), Sydney, Australia, October 2011.

Workshop publications (peer-reviewed)

1. N. Mohapatra, V. Iosifidis, A. Ekbal, S. Dietze, and **P. Fafalios**, "Time-Aware and Corpus-Specific Entity Relatedness", Workshop on Deep Learning for Knowledge Graphs and Semantic Technologies (DL4KGS), in conjunction with the 15th Extended Semantic Web Conference (ESWC'18), Heraklion, Crete, Greece, June 3-7, 2018.
2. T. Yannakis, **P. Fafalios**, and Y. Tzitzikas, "Heuristics-based Query Reordering for Federated Queries in SPARQL 1.1 and SPARQL-LD", 2nd Workshop on Querying the Web of Data (QuWeDa), in conjunction with the 15th Extended Semantic Web Conference (ESWC'18), Heraklion, Crete, Greece, June 3-7, 2018.
3. M. Mountantonakis, C. Allocca, **P. Fafalios**, N. Minadakis, Y. Marketakis, C. Lantzaki and Y. Tzitzikas, "Extending VOID for Expressing the Connectivity Metrics of a Semantic Warehouse", 1st International Workshop on Dataset Profiling & Federated Search for Linked Data (PROFILES'14), in conjunction with the 11th Extended Semantic Web Conference (ESWC'14), Anissaras, Heraklion, Greece, May 2014.

4. Y. Tzitzikas, N. Minadakis, Y. Marketakis, **P. Fafalios**, C. Allocca and N. Mountantonakis, “*Quantifying the Connectivity of a Semantic Warehouse*”, 4th International Workshop on Linked Web Data Management (LWDM'14), in conjunction with the 17th International Conference on Extending Database Technology (EDBT'14), Athens, Greece, March 2014.
5. **P. Fafalios**, M. Salampasis and Y. Tzitzikas, “*Exploratory Patent Search with Faceted Search and Configurable Entity Mining*”, 1st International Workshop on Integrating IR technologies for Professional Search, in conjunction with the 35th European Conference on Information Retrieval (ECIR'13), Moscow, Russia, March 2013.

Book chapters (peer-reviewed)

1. M. Mountantonakis, N. Minadakis, Y. Marketakis, **P. Fafalios** and Y. Tzitzikas, “*Connectivity, Value and Evolution of a Semantic Warehouse*”, Book chapter at “Innovations, Developments, and Applications of Semantic Web and Information Systems”, pp. 1-31, 2018, IGI Global.
2. **P. Fafalios** and Y. Tzitzikas, “*Exploratory Professional Search through Semantic Post-Analysis of Search Results*”, Professional Search in the Modern World, Lecture Notes in Computer Science (LNCS), Vol. 8830, Springer, 2014.

Publications in national conferences (peer-reviewed)

1. **P. Fafalios**, I. Kitsos and Y. Tzitzikas, “*Κλιμακώσιμη και Ευέλικτη Υποστήριξη Στιγμιαίας Επισκοπικής Αναζήτησης*” (*Scalable, Flexible and Generic Instant Overview Search*), Demo paper, 11th Hellenic Data Management Symposium (HDMS'12), Chania, Greece, June 2012.

Publications in magazines

1. Y. Tzitzikas, C. Allocca, C. Bekiari, Y. Marketakis, **P. Fafalios** and N. Minadakis, “*Ontology-based Integration of Heterogeneous and Distributed Information of the Marine Domain*”, ERCIM News 2014 (96), Special theme: Linked Open Data, January 2014.

PARTICIPATION IN CONFERENCE COMMITTEES

Program Committee member in the following conferences:

- 16th Extended Semantic Web Conference (**ESWC 2019**)
- 18th International Semantic Web Conference (**ISWC 2019** - Posters & Demos Track)
- 17th International Semantic Web Conference (**ISWC 2018** - Posters & Demos Track)
- 16th International Semantic Web Conference (**ISWC 2017** - Posters & Demos Track)
- 9th International ACM Web Science Conference 2017 (**WebSci 2017** - Posters Track)
- 15th International Conference on Web-based Learning (**ICWL 2016**)
- 18th International Conference on Asia-Pacific Digital Libraries (**ICADL 2016**)
- Workshop on Benchmarking Linked Data (**BLINK 2017**) at ISWC 2017

Proceedings Chair in the following conference:

- 15th International Conference on Web-based Learning (**ICWL 2016**)

REVIEWER IN JOURNALS AND CONFERENCES

Journals:

- ACM Transactions on the Web (TWEB) (2019)
- The VLDB Journal (2019)
- Journal of the Association for Information Science and Technology (2016-2018)
- Knowledge-Based Systems – Elsevier (2017)
- Knowledge and Information Systems - Springer (2016)
- IEEE Transactions on Knowledge and Data Engineering (2016, 2017)
- Information Processing & Management - Elsevier (2016)
- Multimedia Tools and Applications - Springer (2014)

Conferences:

- Extended Semantic Web Conference (ESWC 2018-2019)
- International Semantic Web Conference – Posters & Demos Track (ISWC 2017-2019)
- IEEE International Conference on Data Engineering (ICDE 2018)
- ACM International Conference on Information and Knowledge Management (CIKM 2015, 2016, 2018)
- European Conference on Information Retrieval (ECIR 2015-2017)
- International ACM Web Science Conference – Posters Track (2017)
- International Conference on Asia-Pacific Digital Libraries (ICADL 2016)
- International Conference on Web-based Learning (ICWL 2016)
- International Conference on Theory and Practice of Digital Libraries (TPDL 2015, 2017)
- International Conference on Web Information Systems Engineering (WISE 2014)

PARTICIPATION IN RESEARCH PROJECTS AND ACTIONS

Alexandria (2016 – 2019)	ALEXANDRIA project (FP7-IDEAS-ERC, No. 339233) – <i>“Foundations for Temporal Retrieval, Exploration and Analytics in Web Archives”</i> . <u>Role:</u> Research in methods for the semantic and entity-based exploration of Web and Social Media archives.
BlueBRIDGE (2015 – 2016)	BlueBRIDGE project (H2020-EINFRA-2015-1, No. 675680) – <i>“Building Research environments for fostering Innovation, Decision making, Governance and Education to support Blue growth”</i> . <u>Role:</u> Extension of the X-Search system for enabling the stochastic re-ranking of search results based on extracted entities. Moreover, I participated in the study of methods for quantifying the connectivity and evolution of a semantic warehouse.
iMarine (2012 – 2014)	iMarine project (FP7-INFRASTRUCTURES, No. 283644) – <i>“Data e-Infrastructure Initiative for Fisheries Management and Conservation of Marine Living Resources”</i> . <u>Role:</u> I designed and developed the system X-Search for the semantic exploration of search results, as well as the system X-Link for the extraction of entities and their further enrichment by exploiting Linked Data. Moreover, I participated in the development of the top-level ontology “MarineTLO” which allows describing and integrating marine data.
PerFedPat (2012 – 2014)	PerFedPat project (FP7-PEOPLE, No. 275522) – <i>“Pluggable Platform for Personalized Multilingual Patent Search”</i> . <u>Role:</u> I collaborated with Professor Michail Salamasis for the exploitation of the results of my PhD studies in the context of Patent Search. I studied methods on how to enrich patent search results with static and dynamically-mined metadata for enabling exploratory patent searching.
MUMIA (2012 - 2014)	MUMIA Cost Action (IC1002) – <i>“Multilingual and Multifaceted Interactive Information Access”</i> . <u>Role:</u> Member of the action, involved in Working Group 4 (Semantic Search, Faceted Search and Visualization), presentation and discussion of my PhD research in working group meetings.

SOFTWARE / WEB DEVELOPMENT

SPARQL-LD	Extension of SPARQL 1.1 that enables to directly fetch and query RDF data from heterogeneous web sources via SERVICE calls. Source code and more info: https://github.com/fafalios/sparql-ld
X-Search	Web search service for semantic and entity-based exploration of search results. Demo and more info: http://www.ics.forth.gr/isl/X-Search
X-Link	Configurable and Linked Data-based named-entity extraction framework. Demo and more info: http://www.ics.forth.gr/isl/X-Link
Theophrastus	System for the semantic annotation and exploration of web documents. Theophrastus was awarded the 1st prize in Blue Hackathon 2013. Demo and more info: http://www.ics.forth.gr/isl/Theophrastus

IOS	System / functionality for instant overview search (search-as-you-type). Demo and more info: http://www.ics.forth.gr/isl/ios
Ithaca	Tool for converting and integrating open datasets to Linked Open Data. Ithaca was awarded the 1 st prize in Hack4Med 2014 (the HOMER project Hackathon). Source code and more info: https://github.com/mountanton/ithaca

DISTINCTIONS, AWARDS AND GRANTS

Distinctions

- Fellowship from legacy “*Maria Michael Manasaki*” for the academic year 2014-2015. This fellowship is awarded once a year to the one or two best graduate students of Computer Science department of University of Crete.

Awards

- **1st prize** for the “*Best Homer Federation Open Data reuse app*”, **2nd prize** for the “*Most useful application for a public sector administration*”, and **1st prize** for the “*Best Solution for Crete*”, in Hack4Med, the HOMER project **Hackathon**, held in the University of Crete, Department of Computer Science, May 16-17, 2014, Voutes Campus, Heraklion, Greece. Michalis Mountantonakis and I developed and presented the system “*Ithaca: From Open Data to Linked Open Data*”.
- **1st prize in Blue Hacakthon 2013**, held in the Hellenic Centre for Marine Research (HCMR), July 1-2, 2013, Gournes, Heraklion, Greece. Panagiotis Papadakos and I developed and presented the system “*Theophrastus: A Semantic Exploration Tool for Marine Taxonomists*”.

Grants

- Travel grant award from the Association for Computing Machinery (ACM) for attending the SIGIR’13 conference in Dublin, Ireland (July 28 – August 1, 2013).
- Travel grant award from the Semantic Web Science Association (SWSA) and the National Science Foundation (NSF) for attending the ISWC’15 conference in Bethlehem, Pennsylvania, USA (October 11-15, 2015).

FELLOWSHIPS

12/2010 – 05/2016 | Fellowship from Institute of Computer Science, Foundation for Research and Technology (FORTH).

10/2014 – 10/2015 | Fellowship from legacy “*Maria Michael Manasaki*”.

TECHNICAL SKILLS

Proficient in:

- Java, J2EE (Servlets, JSP)
- PHP, HTML, CSS, JavaScript, AJAX
- XML, XPath, XQuery, JSON
- RDF, RDF/S, OWL, SPARQL 1.1, Linked Data
- Ontology Engineering, Knowledge Representation
- SQL, UML
- Latex (document preparation system)

Prior experience in:

- C/C++
- Unix/Linux

PERSONAL INTERESTS

Books · Photography · Sports · Cinema