

# UMUTCAN ŞİMŞEK, PHD



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## MAIN AREAS OF RESEARCH

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- Domain-specific patterns for semantic annotations and Knowledge Graphs
- Goal-oriented Dialog Systems
- Knowledge Graph construction with declarative mappings
- Knowledge Graph Maintenance
- Lightweight Semantic Web Services
- schema.org and semantic annotations

## EDUCATION

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<b>Doctor of Philosophy</b>   <i>Computer Science</i> University of Innsbruck	2016 – 2021 Innsbruck, Austria
<b>Master of Science</b>   <i>Computer Engineering</i> Ege University	2013 – 2015 Izmir, Turkey
<b>Master of Science</b>   <i>Computer Science</i> Technische Hochschule Mittelhessen	2013 – 2015 Giessen, Germany
<b>Bachelor of Science</b>   <i>Computer Engineering</i> Ege University	2009 – 2013 Izmir, Turkey

## RELEVANT WORK EXPERIENCE

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<b>Postdoctoral Researcher and Lecturer</b> University of Innsbruck	2021 – Innsbruck, Austria
<b>Researcher and Tutor</b> University of Innsbruck	2015 – 2021 Innsbruck, Austria
<b>Lead Software Developer</b> Aura Informatics	2013 – 2015 Izmir, Turkey

## TEN KEY ACADEMIC PUBLICATIONS

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1. Fensel, Dieter; Şimşek, Umutcan; Angele, Kevin; Huaman, Elwin; Kärle, Elias; Panasiuk, Oleksandra; Toma, Ioan; Umbrich, Jürgen; Wahler, Alexander (2020): Knowledge Graphs. Methodology, Tools and Selected Use Cases. Cham: Springer Nature. ISBN 978-3-030-37438-9.  
<https://www.springer.com/gp/book/9783030374389>

2. Şimşek, Umutcan; Angele, Kevin; Kärle, Elias; Panasiuk, Oleksandra; Fensel, Dieter (2020): Domain-Specific Customization of Schema.Org Based on SHACL. In: Pan, Jeff; Tamma, Valentina; d'Amato, Claudia; Janowicz, Krzysztof; Fu, Bo; Polleres, Axel; Seneviratne, Oshani; Kagal, Lalana: The Semantic Web – ISWC 2020. 19th International Semantic Web Conference, Athens, Greece, November 2–6, 2020, Proceedings, Part I. Cham: Springer Nature (= Information Systems and Applications, incl. Internet/Web, and HCI, 12506 / Lecture Notes in Computer Science, 12506)., ISBN 978-3-030-62418-7, pp. 585 - 600. [https://link.springer.com/chapter/10.1007/978-3-030-62466-8\\_36](https://link.springer.com/chapter/10.1007/978-3-030-62466-8_36) **(Best In-Use Paper Award)**
3. Şimşek, Umutcan; Umbrich, Jürgen; Fensel, Dieter (2020): Towards a Knowledge Graph Lifecycle: A pipeline for the population of a commercial Knowledge Graph. In: Qurator 2020. CEUR Workshop Proceedings 2535, No. 10. [http://ceur-ws.org/Vol-2535/paper\\_10.pdf](http://ceur-ws.org/Vol-2535/paper_10.pdf)
4. Angele, Kevin; Fensel, Dieter; Huaman, Elwin; Kärle, Elias; Panasiuk, Oleksandra; Simsek, Umutcan; Toma, Ioan; Wahler, Alexander (in press): Semantic Web Empowered e-Tourism. In: Xiang, Z; Fuchs, M; Gretzel, U; Höpken, W: Handbook of e-Tourism. Cham: Springer Nature.
5. Şimşek, Umutcan; Kärle, Elias; Fensel, Dieter (2019): RocketRML - A NodeJS Implementation of a Use-Case Specific RML Mapper. In: Knowledge Graph Building Workshop co-located with Extended Semantic Web Conference. CEUR Workshop Proceedings 2489, pp. 46 - 53. <http://ceur-ws.org/Vol-2489/paper5.pdf>
6. Şimşek, Umutcan; Kärle, Elias; Fensel, Dieter (2018): Machine Readable Web APIs with Schema.org Action Annotations. In: Proceedings of the 14th International Conference on Semantic Systems 10th – 13th of September 2018 Vienna, Austria. <https://www.sciencedirect.com/science/article/pii/S1877050918316302?via%3Dihub>
7. Kärle, Elias; Şimşek, Umutcan; Panasiuk, Oleksandra; Fensel, Dieter (2018): Building an Ecosystem for the Tyrolean Tourism Knowledge Graph. In: Pautasso, C; Sanchez-Figueroa, F.; Systä, K.; Murillo Rodriguez, J. M.: Current Trends in Web Engineering. ICWE 2018 International Workshops, MATWEP, EnWot, KD-WEB, WEOD, TourismKG, Cáceres, Spain, June 5, 2018, Revised Selected Papers. Cham: Springer International Publishing (= Lecture Notes in Computer Science)., ISBN 978-3-030-03055-1, No. 25. <https://arxiv.org/abs/1805.05744>
8. Fotopoulou, Eleni; Zafeiropoulos, Anastasios; Terroso-Sáenz, Fernando; Şimşek, Umutcan; González-Vidal, Aurora; Tsiolis, George; Gouvas, Panagiotis; Liapis, Paris; Fensel, Anna; Skarmeta, Antonio (2017): Providing Personalized Energy Management and Awareness Services for Energy Efficiency in Smart Buildings. In: Sensors 17/9, No. 2054. <http://www.mdpi.com/1424-8220/17/9/2054/htm>
9. Şimşek, Umutcan; Kärle, Elias; Holzknecht, Omar; Fensel, Dieter (2018): Domain Specific Semantic Validation of Schema.org Annotations. In: Petrenko, A.K.; Voronkov, A.: Perspectives of System Informatics. 11th International Andrei P. Ershov Informatics Conference, PSI 2017, Moscow, Russia, June 27-29, 2017. Revised Selected Papers. Cham: Springer International Publishing (= Lecture Notes in Computer Science, 10742)., ISBN 978-3-319-74312-7, pp. 417 - 429. [https://link.springer.com/chapter/10.1007/978-3-030-37487-7\\_19](https://link.springer.com/chapter/10.1007/978-3-030-37487-7_19)
10. Kärle, Elias; Şimşek, Umutcan; Fensel, Dieter (2017): semantify. it, a Platform for Creation, Publication and Distribution of Semantic Annotations. In: Homenda, Wladyslaw; Roman, Dumitru: SEMAPRO 2017: The Eleventh International Conference on Advances in Semantic Processing. New York: Curran Associates, Inc., ISBN 978-1-61208-600-2, pp. 22 - 30. [http://www.thinkmind.org/index.php?view=article&articleid=semapro\\_2017\\_2\\_10\\_30007](http://www.thinkmind.org/index.php?view=article&articleid=semapro_2017_2_10_30007) **(Best Paper Award)**

### **Most Important Peer Review Activities, Editorships and/or Memberships in Academic Organizations**

1. Program Committee Member of the 18. Extended Semantic Web Conference (ESWC 2021), Poster and Demo Track.
2. Reviewer for the Semantic Web Journal: Special Issue for Transportation and Data 2020.
3. Reviewer for the Journal of Universal Computer Science (J.UCS): Special Issue for New Trends in Semantic Web-Based Applications
4. Subreviewer for 22nd International Conference on Knowledge Engineering and Knowledge Management (EKAW 2020).

### **Most Important Research Projects**

1. MindLab Project: A methodology and tools for Knowledge Graphs in tourism domain to empower conversational agents. (09/2018 - 08/2020), privately funded, budget: 1 200 000 EUR.  
<https://mindlab.ai>
2. ENTROPY: design of an innovative energy-aware IT ecosystem for motivating behavioural changes towards the adoption of energy efficient lifestyles, EU Horizon 2020, 09/2015 - 08/2018, Grant agreement ID: 649849, funding: 281 500 EUR <https://cordis.europa.eu/project/id/649849/>
3. OntoCommons: Ontology-driven data documentation for Industry Commons. EU Horizon 2020, 11/2021-10/2023, Grant agreement ID: 958371, funding: 131 812 EUR  
<https://cordis.europa.eu/project/id/958371>

### **Academic Awards**

- netidee Grant Call 13: An award given to highly innovative master theses and dissertations. Dissertation topic: Dialogical Access to Lightweight Semantic Web Services, 2018