Dimitar Dimitrov

Curriculum Vitae

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Citizenship	Bulgaria
Place of birth	Plovdiv, Bulgaria
Date of birth	09.02.1984
Interests	Data science, ML, NLP, network science, user modeling

Education

04/2013 – 12/2018	**Ph.D.** in Computer Science at University of Koblenz-Landau, Koblenz, Germany; Thesis: Aspects of Information Access: Modeling Navigation on Wikipedia; Advisors: Prof. Dr. Markus Strohmaier and Prof. Dr. Claudia Wagner
10/2009 – 05/2011	**Master of Science** in Computer Science at HTWG Konstanz, Konstanz, Germany; Thesis: Investigations of Pivot Tightening for the Interval Cholesky Method and of the Solution of Toeplitz Systems of Linear Interval Equations; Advisor: Prof. Dr. Jürgen Garloff
10/2004 – 09/2009	**Diplom** in Software Engineering at HTWG Konstanz, Konstanz, Germany; Thesis: Construction of Totally Non-negative Interval Matrices and Experimental Studies of Interval-Neville-Elimination (in German); Advisor: Prof. Dr. Jürgen Garloff
10/2003 – 09/2004	**German Matura/Studienkolleg** at HTWG Konstanz, Konstanz, Germany
09/2002 – 07/2003	**Intensive German language course** at Unilingua, Göttingen, Germany
09/1997 – 06/2002	**Bulgarian Matura** at TEE Plovdiv, Plovdiv, Bulgaria

Professional Experience

02/2022 to current	**Team Lead Information Extraction and Linking** in the Knowledge Technologies for the Social Sciences Department at GESIS – Leibniz Institute for the Social Science, Cologne, Germany
03/2020 – 01/2022	**Acting Team Lead Information Extraction and Linking** in the Knowledge Technologies for the Social Sciences Department at GESIS – Leibniz Institute for the Social Science, Cologne, Germany
03/2019 – 02/2020	**PostDoc** in the Knowledge Technologies for the Social Sciences Department at GESIS – Leibniz Institute for the Social Science, Cologne, Germany

06/2011 – 02/2019	**Research associate** in the Knowledge Technologies for the Social Sciences Department at GESIS – Leibniz Institute for the Social Science, Cologne, Germany
06/2008 – 05/2011	**Working student in software development** at InnoSysTec GmbH, Salem, Germany
04/2007 – 09/2007	**Intern in software development** in the Software Applications Department at Siemens Postal Automation, Konstanz, Germany
03/2006 – 02/2007	**Working student in software development** in the Software Applications Department at Siemens Postal Automation, Konstanz, Germany
09/2005 – 02/2006	**Intern in software development** in the Reading/Coding Department at Siemens Postal Automation, Konstanz, Germany

Research Visits

08/2019 – 09/2019	**Visiting researcher** at the eXascale Infolab at University of Fribourg, Fribourg, Switzerland; Host: Prof. Dr. Philippe Cudré-Mauroux, Duration: two months
07/2014 – 08/2014	**Visiting researcher** at the Knowledge Technologies Institute at Graz University of Technology, Graz, Austria; Host: Prof. Dr. Denis Helic, Duration: two months

Competences & Personal Skills

Competences	**Data collection:** API- and scraping-based collection of social media and web data e.g., creation and management of a Twitter/X archive containing 16B posts; **Data engineering:** Design and architecture of web-based systems and pipelines for parallel processing of large-scale and high-frequency data requests; **ML and NLP:** Feature engineering and employment of several core machine learning algorithms such as boosted trees or deep learning for classification and clustering; **Network analysis:** Analysis of large-scale information and social networks, e.g., identifying and understanding collective behavior phenomena shaping the network structure, i.e., degree distribution, clustering coefficients, k-core and bow-tie structures; **User modeling:** Data-driven development and evaluation of agent-based models capturing user behavior in information and social networks, e.g., Markov chains- and decentralized search-based click models
Programming Skills	**Python:** SciKit Learn, Pandas, HDFS, Hadoop; Spark; **Java:** Spring, Tomcat, Solr, ActiveMQ; **SQL/RDBMS:** MySQL, PostgreSQL, Oracle; further knowledge in Elasticsearch, R, Matlab, Grails, Groovy, C/C++, LaTeX, Javascript, HTML
Project- and Team-leading	Team and project leadership and coordination experience throughout various academic and industry projects
Languages	**Native:** Bulgarian; **Proficient user:** German, English

Selected Publications

Proceedings

2024   J. Nevin, P. Zhang, P. Groth, M. Lees, **D. Dimitrov**, S. Dietze. *Understanding the impact of entity linking on the topology of entity co-occurrence networks for social media analysis: online first*. In Knowledge Engineering and Knowledge Management: 24th International Conference (EKAW 2024), November 26–28, 2024, Amsterdam, The Netherlands.Lecture Notes in Computer Science(), vol 15370. Springer, Cham.

2024   S. Linzbach, **D. Dimitrov**, L. Kallmeyer, K. Evang, H. Jabeen, S. Dietze. *Dissecting Paraphrases: The Impact of Prompt Syntax and supplementary Information on Knowledge Retrieval from Pretrained Language Models.* In Proceedings of the 2024 Conference of the North American Chapter of the Association for Computational Linguistics (NAACL2024), June 16–21, 2024, Mexico City, Mexico, Association for Computational Linguistics, ACL2024.

2024   J. Schmüser, H. S. Ramulu, N. Wöhler, C. Stransky, F. Bensmann, **D. Dimitrov**, S. Schellhammer, D. Wermke, S. Dietze, Y. Acar, S. Fahl. *Analyzing Security and Privacy Advice During the 2022 Russian Invasion of Ukraine on Twitter.* In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI 24), May 11-16, 2024, Honolulu, HI, USA. (CORE A* conference)

2022   **D. Dimitrov**, D. Segeth, and S. Dietze. *Geotagging TweetsCOV19: Enriching a COVID-19 Twitter Discourse Knowledge Base with Geographic Information.* In Companion Proceedings of the Web Conference 2022 (WWW '22 Companion), April 25–29, 2022, Virtual Event, Lyon, France.

2020   **D. Dimitrov**, E. Baran, P. Fafalios, R. Yu, X. Zhu, M. Zloch, and S. Dietze. *TweetsCOV19 - A Knowledge Base of Semantically Annotated Tweets about the COVID-19 Pandemic.* In the 29th ACM International Conference on Information and Knowledge Management (CIKM'2020), October 19–23, 2020, Virtual Event, Ireland.

2018   **D. Dimitrov**, F. Lemmerich, F. Flöck, and M. Strohmaier. *Query for Architecture, Click through Military: Comparing the Roles of Search and Navigation on Wikipedia.* In 10th ACM Conference on Web Science (WebSci18), 27-30 May, Amsterdam, Netherlands, 2018.

2017   F. Lemmerich, P. Singer, M. Becker, L. Espín-Noboa, **D. Dimitrov**, D. Helic, A. Hotho, and M. Strohmaier. *Comparing hypotheses on sequential behavior: A Bayesian approach and its applications.* In European Conference on Machine Learning and Knowledge Discovery in Databases (ECML/PKDD'2017), 18-22 September, Skopje, Macedonia, 2017.

2017   **D. Dimitrov**, P. Singer, F. Lemmerich and M. Strohmaier. *What Makes a Link Successful on Wikipedia?* In 26th International World Wide Web Conference (WWW'2017), 3-7 April, Perth, Australia, 2017. (CORE A* conference, acceptance rate 164/966, 17% quota)

2017 **D. Dimitrov**. *Modeling Navigation in Information Networks.* In Doctoral Consortium at the 10th ACM International Conference on Web Search and Data Mining (WSDM'2017), 6-10 February, Cambridge, United Kingdom, 2017. (CORE A* conference)

2016 D. Lamprecht, **D. Dimitrov**, D. Helic and M. Strohmaier. *Evaluating and Improving Navigability of Wikipedia: A Comparative Study of Eight Language Editions.* In 12th International Symposium on Open Collaboration (OpenSym'2016), 17-19 August, Berlin, Germany, 2016.

2015 **D. Dimitrov**, P. Singer, D. Helic and M. Strohmaier. *The Role of Structural Information for Designing Navigational User Interfaces.* In 26th ACM Conference on Hypertext and Social Media (HT'2015), 1-4 September, Middle East Technical University Northern Cyprus Campus, Cyprus, 2015. (CORE A conference)

2013 **D. Dimitrov**, E. Baran and D. Wegener. *Making Data Citable - A Web-based System for the Registration of Social and Economics Science Data.* In 9th International Conference on Web Information Systems and Technologies (WEBIST'2013) 8-10 May, Aachen, Germany, 2013.

2012 A. Wira-Alam, **D. Dimitrov** and W. Zenk-Möltgen. *Extending Basic Dublin Core Elements for an Open Research Data Archive.* In International Conference on Dublin Core and Metadata Applications (DCMI'2012), 3-7 September, Malaysia, 2012.

Posters

2016 **D. Dimitrov**, P. Singer, F. Lemmerich and M. Strohmaier. *Visual Positions of Links and Clicks on Wikipedia.* In 25th International World Wide Web Conference (WWW'2016), 11-15 April, Montreal, Canada, 2016. (CORE A* conference)

2016 M. Becker, H. Mewes, A. Hotho, **D. Dimitrov**, F. Lemmerich and M. Strohmaier. *SparkTrails: A MapReduce Implementation of HypTrails for Comparing Hypotheses About Human Trails.* In 25th International World Wide Web Conference (WWW'2016), 11-15 April, Montreal, Canada, 2016. (CORE A* conference)

2013 **D. Dimitrov**, D. Hienert, K. Boland and D. Wegener. *Linking Research Data and Literature: Integration of da|ra and Sowiport based on Link Information from InFoLiS.* In IASSIST Conference (IASSIST'2013) 28-31 May, Cologne, Germany, 2013.

Journals

2023 A. Katsanidou, M. Kneuer, F. Bensmann, **D. Dimitrov**, S. Dietze. *Limitations of democratic rights during the Covid-19 pandemic—exploring the citizens' perception and discussions on dangers to democracy in Germany.* Zeitschrift für Vergleichende Politikwissenschaft 16 (4), 635-661, 2023.

2019 **D. Dimitrov**, F. Lemmerich, F. Flöck and M. Strohmaier. *Different Topic, Different Traffic: How Search and Navigation Interplay on Wikipedia.* The Journal of Web Science online first (1), 2019.

Book Chapters

2018 **D. Dimitrov**, D. Helic and M. Strohmaier. *Tag-based Navigation and Visualization.* In: Peter Brusilovsky, Daqing He (eds) Social Information Access: Systems and Technologies, LNCS, vol 10100, pages 181–212, Springer International Publishing, 2018.

2020 W. Otto, A. Zielinski, B. Ghavimi, **D. Dimitrov**, N. Tavakolpoursaleh, K. Abdulahhad, K. Boland, and S. Dietze. *Knowledge extraction from scholarly publications: The GESIS contribution to the rich context competition.* In: Julia Lane, Ian Mulvany, and Paco Nathan (eds) Rich search and discovery for research datasets, pages 107-127, Los Angeles u.a.: Sage. 2020. https://study.sagepub.com/richcontext.

Awards

RCC Finalist NYU Coleridge Initiative's Rich Context Competition (RCC), New York, USA https://coleridgeinitiative.org/richcontextcompetition

Honorable Mention Award at CORE A* conference J. Schmüser, H. S. Ramulu, N. Wöhler, C. Stransky, F. Bensmann, **D. Dimitrov**, S. Schellhammer, D. Wermke, S. Dietze, Y. Acar, S. Fahl. *Analyzing Security and Privacy Advice During the 2022 Russian Invasion of Ukraine on Twitter.* In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI 24), May 11-16, 2024, Honolulu, HI, USA.