

Daria Stepanova (Dr. techn.)

Curriculum Vitae

Bosch Center for Artificial Intelligence
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📄 [dariastepanova@github.io](https://github.com/dariastepanova)



Personal Information

Born May 7, 1988 in St. Petersburg, Russia
Nationality Russian
Languages Russian (native speaker), English (proficient user), German (upper-intermediate)

Education

07/11–04/15 **PhD student at Vienna University of Technology, Vienna, Austria.**

Faculty Informatics

Program Mathematical Logic in Computer Science

Thesis Inconsistencies in Hybrid Knowledge Bases

Research area Logic Programming, Ontologies, Inconsistency Management

Supervisor O. Univ. Prof. Dr. techn. Thomas Eiter

Co-supervisor Dr. Michael Fink

Average grade: 1.0/1.0 (*graduation with distinction*)

09/05–07/10 **Diploma student at St. Petersburg State University, St. Petersburg, Russia.
equiv. to BSc + MSc**

Faculty Mathematics and Mechanics

Specialization Applied Informatics

Thesis Computer-aided Resolution of Unsatisfiabilities in Ontologies

Supervisor Prof. Dr. techn. Boris Novikov

Average grade: 4.75/5.0 (*graduation with distinction*)

Awards and Scholarships

2016–2018 Lise Meitner Award Fellowship of Max Planck Institute for Informatics

2011–2015 Scholarship for a Doctoral Program “Mathematical Logic in Computer Science”

Continuing Education

- 09/16-10/16 **Online course.**
Exploratory Data Analysis by Johns Hopkins University on Coursera
- 10/11-12/12 **Student at Vienna University of Technology, Vienna, Austria.**
German as a foreign language
Levels completed: A 2.1, B 2.2
- 10/06-07/07 **Student at St. Petersburg State University, St. Petersburg, Russia.**
Department of Linguistics
English for professionals
Level completed: advanced

Work Experience

- 09/18-
present **Research Scientist at Bosch Center for AI, Renningen, Germany.**
Group Natural Language Processing and Semantic Reasoning
Responsibilities:
 - Building a group on Knowledge Representation and Reasoning
 - Research strategy development
 - Establishing collaborations with universities
 - Student selection supervision at master and PhD level
 - Industrial project proposal preparation
- 11/17-
present **Senior researcher at Max Planck Institute for Informatics (MPII), Saarbrücken, Germany.**
Group Databases and Information Systems group
Responsibilities:
 - Head of Semantic Data research direction
 - Student selection and supervision
 - Teaching
- 10/15-10/17 **Postdoctoral researcher at Max Planck Institute for Informatics (MPII), Saarbrücken, Germany.**
Group Databases and Information Systems group
Supervisor Prof. Gerhard Weikum
Responsibilities:
 - Develop algorithms for mining logical formalisms from Knowledge Graphs
 - Student selection and supervision
 - Teaching

Technologies and skills:

- Data mining, inductive logic programming

07/11–07/15 **Research assistant at Vienna University of Technology, Vienna, Austria.**

Knowledge Based Systems group

Responsibilities:

- Develop and implement framework for repairing inconsistencies in hybrid knowledge bases (combinations of logic programs and ontologies)
- Bachelor student supervision

Technologies and skills:

- C++, Unix Shells, OWL, RDF

<https://github.com/hexhex/dlliteplugin>

- Declarative logic programming, description logics, complexity analysis

Involved in projects:

- Reasoning in Hybrid Knowledge Bases (2011–2012)

<http://www.kr.tuwien.ac.at/research/projects/hybridkb/index.html>

- Evaluation of ASP Programs with External Source Access (2014–2015)

<http://www.kr.tuwien.ac.at/research/projects/hexhex/>

10/09–06/11 **Specialist on system integration at “eKassir”, St. Petersburg, Russia.**

Company develops software for payment systems and terminals

Responsibilities:

- Team lead in technical support and remote assistance
- System installation and adjustment on the client's side
- Technical trainings for clients
- Business trips: Podgorica (Montenegro), Akkra (Ghana)

09/08–03/09 **Research intern at Newcastle University, Newcastle-upon-Tyne, UK.**

Responsibilities:

- Develop a knowledge-based system for information security decision-making

Technologies and skills:

- OWL, Java Script

Involved in projects:

- Trust Economics (2008–2009)

<https://wiki.cs.ncl.ac.uk/trusteconomics/TrustEconomics>

10/07–08/08, 04/09–10/09 **Part-time tutor of English for corporate clients at American Language Masters (ALM), St. Petersburg, Russia.**

Research Visits

- 02/2017 **University of Oxford, Oriel College, Oxford, UK.**
Project on semantically enhanced sequence mining
- 05/2016 **Research visit to University of Bari, Bari, Italy.**
Project on mining nonmonotonic rules from Knowledge Graphs

Computer Skills

- **Programming Languages**
JAVA, C, C++, Java Script, R
- **Knowledge Based Systems**
RDF, RDFS, OWL, Logic Programming
- **Operating Systems**
Linux (Ubuntu), Microsoft Windows

Additional Computer Experience

- Plugin for Repairing Inconsistent DL-programs (C++) within dlhex framework
<https://github.com/hexhex/dlliteplugin>
- Participant at 6th Angry Birds AI competition (<http://www.aibirds.org>), co-located with IJCAI 2017 as a member of the AngryHEX team
Ranked 3rd out of 10 participants
- Knowledge Base for Justified Information Security Decision-making based on ISO 27002 (Information Security Standard) and UCISA Information Security Toolkit (<http://www.ucisa.ac.uk/istoolkit>) (OWL Ontology Web Language, JOWL Java Script library for visualizing OWL-RDFS documents)
- Diploma thesis project: Computer-aided Resolution of Unsatisfiabilities in Ontologies (Java)

Teaching and Student Supervision

Teaching:

- November 2019 Tutorial on “Rule Induction and Reasoning in Knowledge Graphs” at Open Data Science conference
- Invited lecturer, 100 students
- September 2019 Co-chair of Reasoning Web summer school on “Explainable AI”, 60 students
- Lecturer selection and invitation, and student selection, planning of tutorial sessions
- September 2018 Rule Induction and Reasoning in Knowledge Graphs

- Reasoning Web summer school on “ Learning, Uncertainty, Streaming, and Scalability”, 40 students
- WS 2017/18 Knowledge Representation for the Semantic Web at MPI for Informatics
 - 6 ECTS, Master level course, 25 students
 - Delivering lectures and leading tutorial sessions
- WS 2017/18 Master thesis seminar at MPI for Informatics
 - Full organization of master thesis support seminar

PhD supervision:

- Mohamed Gad Elrab (September 2015 - present) (co-supervised with Prof. Gerhard Weikum)

Masters supervision:

- Thinh Vinh Ho (September 2017 - present): *Hybrid Embedding-based Approach to Rule Learning from Knowledge Graphs*
- Hai Dang Tran (June 2016 - April 2017): *Approach to Nonmonotonic Rule Learning from Knowledge Graphs*

Bachelors supervision:

- Andreas Humenberger (graduated April, 2014): *Implementing Paracoherent Answer Set Semantics* (co-supervised with Dr. Michael Fink)

Internship supervision:

- Po-Wei Wang (June 2019-July 2019): *Differentiable Learning of Numerical Rules in Knowledge Graphs*
- Thomas Pellissier-Tanon (March 2017 - May 2017): *Completeness-aware Rule Learning from Knowledge Graphs*

Talks Given at Conferences and Workshops

Digital Knowledge: From Facts to Rules and Back

Invited talk at IBM

Boston and New York, USA, October 2018

Rule Learning Guided by Embedding Models

17th International Semantic Web Conference, 2018

Monterey, United States of America, October, 2018

Rule Induction and Reasoning in Knowledge Graphs

Reasoning Web summer school, 2018

Luxembourg, September, 2018

Towards Nonmonotonic Relational Learning from Knowledge Graphs

26th Inductive Logic Programming Conference

London, United Kingdom, September, 2016

Towards Practical Deletion Repair of Inconsistent DL-programs

21st European Conference on Artificial Intelligence

Prague, Czech Republic, August, 2014

Towards Practical Deletion Repair of Inconsistent DL-programs

27th International Workshop on Description Logics

Vienna, Austria, July, 2014

Data Repair of Inconsistent DL-programs

23rd Joint International Conference on Artificial Intelligence

Beijing, China, August, 2013

Semantic Independence in DL-programs

6th International Conference on Web Reasoning and Rule Systems

Vienna, Austria, September, 2012

A Knowledge Base for Justified Information Security Decision-making

4th International Conference on Software and Data Technologies

Sofia, Bulgaria, July, 2009

**A Knowledge Base for Justified Information Security Decision-making
(progress report)**

Trust Economics Workshop

Newcastle-upon-Tyne, United Kingdom, December, 2008

Poster Presentations

Learning Rules from Incomplete KGs using Embeddings

17th International Semantic Web Conference

Monterey, United States of America, October, 2018

Towards Nonmonotonic Relational Learning from Knowledge Graphs

26th Inductive Logic Programming Conference

London, United Kingdom, September, 2016

Inconsistencies in Hybrid Knowledge Bases (PhD Description)

14th International Conference on Principles of Knowledge Representation and Reasoning

Vienna, Austria, July, 2014

Exploiting Support Sets for Answer Set Programs with External Evaluations

28th Conference on Artificial Intelligence

Quebec, Canada, July, 2014

AngryHEX: An Angry Birds-playing Agent based on HEX-Programs

Angry Birds AI competition (<http://www.aibirds.org>)

Prague, Czech Republic, August, 2014

Data Repair of Inconsistent DL-programs

23rd Joint International Conference on Artificial Intelligence

Beijing, China, August, 2013

Program Committee Membership

- International Joint Conference on Artificial Intelligence (IJCAI): 2018, 2020
- European Semantic Web Conference (ESWC): 2018
- Portuguese Conference on Artificial Intelligence (EPIA): 2017
- International Conference on Artificial Intelligence (AAAI): 2017, 2018, 2019
- Workshop on Trends and Applications of Answer Set Prog. (TAASP): 2016
- Conference on Web Reasoning and Rule Systems (RR): 2016
- European machine learning and data mining conference (ECMLPKDD): 2016, 2017
- Conference on Knowledge Engineering and Semantic Web (KESW): 2013, 2014, 2015, 2016

Reviewing for Journals

- Semantic Web Journal (SWJ): 2019
- Journal of Artificial Intelligence Research (JAIR): 2018
- Journal of Data Mining and Knowledge Discovery (DAMI): 2017
- Journal of Computer Science and Technology (JCST): 2017
- Journal of Data Semantics (JoDS): 2015
- Journal of Web Semantics (JWS): 2014

Reviewing for Conferences and Workshops

- International Joint Conference on Artificial Intelligence (IJCAI): 2016
- International Description Logic Workshop (DL): 2015
- International Workshop on Nonmonotonic Reasoning (NMR): 2014
- International Workshop on Reactive Concepts in Knowledge Representation (REACTKNOW): 2014
- International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR): 2013, 2015
- AAAI Conference on Artificial Intelligence (AAAI): 2013
- International Semantic Web Conference (ISWC): 2013
- International Conference on Scalable Uncertainty Management (SUM): 2013
- Int. Conf. on Logic Programming and Nonmonotonic Reasoning (LPNMR): 2013
- Conf. on Knowledge Engineering and Semantic Web (KESW): 2013, 2014, 2015

Volunteer Work in Organizing Conferences and Public Events

- Vienna Summer of Logic (VSL 2014), Vienna, Austria, July, 2014
- 25th International Conference on Computer-aided verification (CAV 2013), St. Petersburg, Russia, July, 2013
- Rhythmic Gymnastics European Champ., Vienna, Austria, May-June, 2013

- 6th International Conference on Web Reasoning and Rule Systems, Vienna, Austria, September, 2012