

Stijn (“Stan”) Heymans

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Summary

I am a Senior Research Scientist with 13 years of experience in Artificial Intelligence research with a focus on Semantic technologies.

I have contributed to US-funded, EU-funded, Austrian-funded, and privately funded research projects where I helped solving practical knowledge representation and

reasoning problems. I have a strong theoretical background in Semantic technologies and reasoning frameworks with a focus on Description Logics (ontologies) and Logic Programming (rules).

I have co-founded and developed [Sheldonize](#), a task manager that automatically schedules to-dos on a calendar.

Core Skills

Research: My research is in the area of Semantic technologies, with topics ranging from the integration of OWL ontologies and rules, over RDF(S) complexity, to question answering in the presence of large biological knowledge bases. I have over 65 publications in journals such as ACM’s Transactions of Computational Logic, and in conference proceedings such as ISWC or AAAI. Please refer to [a complete list of my publications](#) for a full overview. I have served in the Program Committee of over 33 conferences and workshops and participated in 19 national and international research projects.

Development and Prototyping: I did back-end development in Common Lisp on a flagship AI project (Project Halo), used Java in the context of an ontology and rule IDE, and developed a Datalog engine in Python. I prototyped a drug interaction detector in SWI-Prolog. For my web-based project I used Django.

Leadership: I led a multi-cultural team of 10+ PhD students and programmers in the context of EU projects. I was the PI on an Austrian project, overseeing work with 1 PhD student and 1 Master’s student. I was the technical lead for the Vienna University of Technology in the OntoRule project.

Natural Languages: Dutch (*mother tongue*), English (*fluent*), German (*conversational*), French (*basic*)

Other skills : I’d be happy to share my experience with OWL, RDF(S), SPARQL, Answer Set Programming, MySQL, Amazon Web Services, Clojure, domain modeling using ArgoUML, requirements analysis

Work Experience

Sheldonize LLC

Co-Founder and Developer

SAN FRANCISCO, CA, UNITED STATES

Nov 2013 – present

Skills used: Django, Python, bootstrap, AWS, git, MySQL

Role: Full-stack development for a task management application that schedules work automatically.

Challenges: Ensuring product-market fit and acquiring users.

SRI International

Computer Scientist

MENLO PARK, CA, UNITED STATES

Oct 2011 – Jun 2014

Skills used: Lisp, Requirements analysis, Python, Java, Proposal writing, Question answering research

Role:

- Specification and implementation of question answering methods in the [Automated User-Centered Reasoning and Acquisition System \(AURA\)](#); our team won the “best video” award at AAAI 2012 describing the iPad application [Inquire](#) built on AURA.
- Implementation and maintenance of the tracer/debugger and the testing infrastructure for the *Rule Authoring and Validation Environment (RAVE)*, an IDE for editing logical rules and OWL ontologies.
- Implementation of a rule engine as part of a distributed reasoning architecture.

Challenges: Translating biology SME requirements into working heuristics for question answering algorithms; dealing with distributed aspects of implementing a rule engine.

SemanticBits LLC
Semantic Architect

HERNDON, VA, UNITED STATES
Oct 2010 – Oct 2011

Skills used: RDF(S) modeling, SWI-Prolog, UML domain modeling, Grails

Role:

- Specification of services using models from the health care and life sciences domain.
- Definition of semantic domain models for clinical genomicist software.
- Prototyping *mymedintel*: based on the FDA's drug interaction data, I implemented a system using SWI-Prolog that used the FDA data to detect possible interactions or side effects.
- Participation in NCI's Semantic Infrastructure 2.0 Inception Team.

Challenges: Spearheading semantic technologies in a product-oriented environment.

Vienna University of Technology
Postdoc Researcher

VIENNA, AUSTRIA
Feb 2008 – Oct 2010

Skills used: technical leadership and mentoring, semantic technologies research, teaching

Role:

- Leading the integration of OWL and RDF(S) ontologies and rules in the context of the European project *OntoRule* for Vienna.
- Application for an Austrian project around distributed logic programming in 2007 and supervision of 1 PhD student as the Principle Investigator.
- Teaching a Semantic Web Technologies course covering RDF(S), OWL, and SPARQL.

Challenges: A research challenge of *OntoRule* was to have efficient reasoning in combination of both ontologies and rules. We provided the theoretical framework in which such efficient light-weight reasoning was shown to be possible.

Digital Enterprise Research Institute / University of Innsbruck
Postdoc Researcher and Team Lead

INNSBRUCK, AUSTRIA
Mar 2006 – Jan 2008

Skills used: technical leadership and mentoring, funding acquisition

Role:

- Providing technical leadership for 10+ international PhD researchers and programmers.
- Managing 7 European projects for a total of \$6.6 million and 3 Austrian projects for a total of \$800K, for the Digital Enterprise Research Institute (DERI).
- Recruitment of personnel, scientific coordination of the different projects, and resource allocation, again within DERI.
- Leading a team of 3 scientific programmers that developed the rule engine *IRIS* for deployment in different projects in the Semantic Web services area.

Challenges: Given the large amount of projects, the big challenge was to align PhD student topics with work required in a multitude of European projects. Technically, we often had to argue the case for Semantic technologies vs relational database technologies with database-oriented partners.

Please refer to my [Linked-in profile](#) for more details on my work experiences.

Education

Vrije Universiteit Brussel (Free University Brussels)
PhD in Computer Science

BRUSSELS, BELGIUM
2001 – 2006

Semantic Web research (integration of ontology languages with rule-based approaches)

Vrije Universiteit Brussel (Free University Brussels)
Master's degree in Mathematics

BRUSSELS, BELGIUM
1997 – 2001