

SEMMTECH

Studying and Semmtech?

Who are we?

Semmtech is a startup company with an innovative base in semantic information management. Our challenge is to develop and implement this innovation. The past years we have developed a framework for Semantic Web applications based on RDF/OWL and Jena. Last year we have started the development of our own software.

Who are we looking for?

Semmtech offers graduate students the opportunity of doing research on specific subjects within our company. You will be responsible for your own work and you are able to work independently. During your research you will have continuous support from your company mentor. You will have the freedom to work when and where, as you please. However, there will be regular meetings at our Amsterdam office.

Subject: Semantic Mathematical Models

The goal of this research project is to be able to model basic mathematical operations and formulas within a semantic model. Examples of the types of calculations are cost calculations of activities, or geometrical calculations for finding areas and volumes of physical objects. After conceptualizing these formulas, the modeled calculations can be automatically performed, using the concepts described by the model.

Apart from formulas, the quantities of the various characteristics of classes and individuals, as well as their units of measure, need to be modeled in a computer interpretable fashion. These conceptualized quantities can be used as the input of the mathematical operations described by the formulas.

This subject is targeted at students in the field of computer science, and more specific in the area of formal modeling languages and/or information- and knowledge management.

Some of the subjects relevant for this project are:

- Semantic modeling (RDF/OWL)
- Modeling of characteristics, qualities and their units of measure
- Modeling of mathematical operations and formulas
- Query language for RDF (SPARQL)
- SPARQL Inference Notation (SPIN)

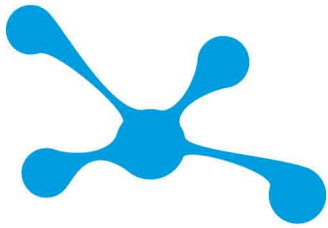
What do we offer?

Besides guidance and support Semmtech offers a modest fee for the time and effort put into the subject. And needless to say, we hope that we can offer you a job after your graduation.

Do you have a special interest in Semantic Web technology? Are you accurate and motivated to help further develop our startup company? Than please contact Daan Oostinga or send us an email with your resume and motivation to jobs@semmtech.nl.

If you are not interested in the subject above, but you have other interesting ideas/thoughts, don't hesitate to contact us. We are more than willing to discuss your ideas/thoughts or research and internship opportunities.

MASTER THESIS



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Subject: Semantic Publication Platform

Knowledge is only valuable if it can be shared, therefore creators of the semantic models should be able to publish these models online, on a publication platform. The goal of this platform is to allow users to share their knowledge with one another, and offer mechanisms for indexing and searching the content of these models. Apart from maybe user credentials and user rights, all information about the published models, should be stored within the models themselves.

Areas of interest during the development, and possibly implementation, of the publication platform are: authorization, who is allowed to publish what, and who may access this knowledge; provenance, who owns the information; version management, how should local changes be synchronized with online resources; querying capabilities of the published models. This subject is targeted at students in the field of computer science with an interest in software engineering, information and knowledge management and/or distributed systems.

Some of the subjects relevant for this project are:

- Web technologies and -protocols, like (RESTful) Web Services
- Semantic modeling (RDF/OWL)
- Publishing and managing models online
- Managing users and their rights
- Authentication and authorization
- Version management
- Query Language for RDF (SPARQL)

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