Supervisor's review of the master thesis

The reviewer: Alexandr Rosen

The author: Antonio Fernando García Sevilla

Title of the thesis: An online collaborative platform for the development of empirical grammars

Text of the review

- The thesis describes an ambitious project, involving a substantial exercise in software system design, support for a range of sophisticated linguistic tools, and sample grammars showing the system's main functionalities. More specifically, the author designed and implemented a web-based environment for the development of (primarily) rule-based grammars, useful for individuals as well as teams, accessible to linguists of diverse backgrounds and interests, theoreticians and NLP experts. The need for such a system is shown to be real — available systems offer only partial solutions, if any.

- The implemented system is based on design principles that support such goals by being cross-platform, open source, persistent, configurable, extensible, interoperable, live-editable, multilingual . . .

- Most of the workload rests on the client side, which implements a Javascript interpreter, a treebanking component and a linguistic engine, including a grammar parser and interpreter. The server software is written as a Javascript module.

- The parser is implemented in Javascript as a library of objects and functions, called Borjes, which can be run by web browsers on the client side or in the server. Although inspired by the formalism of HPSG, Borjes aspires to be a generic formal grammar library.

- The thesis includes two use cases, showing the power of the system: a numerical lexicalized CFG grammar, and an HPSG grammar of a non-trivial fragment of Spanish.

- The author has shown substantial expertise, skill and high motivation in the design and implementation of both parts: computational and linguistic.

- The initial version of the grammar-writing module was a seminar project with a scope much broader than the assigned topic. It was probably the best project I have seen.

- It was not easy to replicate in Borjes the behaviour of a standard software for implementing HPSG grammars, so not all properties of the HPSG formalism are available. Yet I plan to use the system in introductory classes on HPSG and related theories/formalisms.

- The author is competent in the use of suitable resources, including literature and available software. Generally, he is well informed about the relevant fields and recent developments.

- Our suboptimal amount of interaction, due to the geographical distance, nevertheless proved that the author is able to achieve remarkable results on his own, while being quite responsive to comments.

- The text of the thesis is in fact a detailed companion to the system available on line.

Recommendation for defense

For reasons given above I *recommend* the thesis for defense.

Contest of students' theses

An excellent thesis, suitable for the contest of students' theses: **YES**.

Prague, 27 January 2016

Signature: