Grammatical Framework tutorial

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Overview

Monday 10:05.

Hands-on introduction to GF

Tuesday 14:00.

Translating between language and logic

Thursday 9:00.

Large-scale open-domain translation

Key questions

Can we find common structures in different languages?

Can we translate between formal logic and rigorous informal language?

Can we translate everything?

To take home, if you want

- Build your own grammars and translation systems.
- Build a natural language interface to your favourite logic in your favourite natural languages.
- Contribute to the large-scale community-based translation project.

Tutorial 1

Hands-on introduction to GF

The Mission of GF

To formalize the grammars of the world and make them usable in computer applications.

GF in a nutshell

GF = Logical Framework + concrete syntax

Logical Framework = constructive type theory
● ALF, Coq, Agda, …

Concrete syntax = PMCFG
● parallel multiple context-free grammars

A very brief history

- (1994. *Type-Theoretical Grammar*)

- 1998. GF version 0.1 at Xerox in Grenoble

- 2010. MOLTO project @ EU

- 2011. *Grammatical Framework: Programming with Multilingual Grammars*

- 2014. 100+ contributors, 30+ languages, 100+ articles, 10+ PhD theses

At the same time as...

1990- main-stream computational linguistics is statistical

Grammars are replaced by machine learning

Structures are replaced by n-grams of words

- Why are we still using grammars?

- Can we do some things better than statistics?

- Should we combine grammars with statistics?

Hands on, at last

GF home page: http://www.grammaticalframework.org

Translator 1: http://cloud.grammaticalframework.org/minibar.html

Translator 2: http://cloud.grammaticalframework.org/wc.html

Mobile app: http://www.grammaticalframework.org/demos/app.html

Do it yourself: http://cloud.grammaticalframework.org/gfse.html

Install GF: http://www.grammaticalframework.org/download.html