

## **GRADUATE COURSE: MACHINE TRANSLATION – FINITE-STATE MODELS AND STATISTICAL APPROACHES**

**8-10 October 2007, UCL, Louvain-la-Neuve**

The graduate course: “*Machine Translation - finite-state models and statistical approaches*” will be given by the Prof. Enrique Vidal, Universidad Politecnica de Valencia, Spain (<http://web.iti.upv.es/~evidal/>).

Machine translation is known as one of the hardest tasks in artificial intelligence. The initial hopes, dating back to the sixties and seventies, to build an automatic translation system were dashed. In the last decade however, spectacular improvements were observed. While machine translation is still an open research problem, practical software exists providing accurate translations in well defined domains or translation assistance for professionals. These successes are mostly due to two factors: the dramatic increase of available computing resources (CPU, disk and memory) and the development of well founded and highly effective pattern recognition and statistical learning methods. Machine translation is thus a very good example of the success of machine learning techniques over rule-based systems. This course presents the basics in machine translation as well as latest advances with a strong emphasis on example-based learning techniques and statistical methods. Here the examples form parallel corpora typically consisting of sentences in a source language and their corresponding translation in a target language. Additional information such as dictionaries and/or partial alignments between the sentences can also be used. The various topics of the course will be covered according to the following schedule.

*October 8, 2007 (10.00-12.00 and 14.00-16.00)*

- Definitions and approximations to the machine translation problem
- Statistical framework of machine translation
- Software environments for processing parallel corpora

*October 9, 2007 (10.00-12.00 and 14.00-16.00)*

- Statistical alignment models
- Statistical finite-state transducers

*October 10, 2007 (10.00-12.00 and 14.00-16.00)*

- Speech-to-speech translation techniques
- Computer-assisted translation systems

Registration to the course is free but mandatory. Please fill in the online registration form here:

<http://www.uclouvain.be/doctoralschool-cil/index.php?page=agenda>

The course will be given on October 8, 9 and 10 from 10 am to 4 pm in the seminar room (3rd floor) of the Reaumur building. Detailed access information can be found here:

<http://www.info.ucl.ac.be/Bienvenue/adresse.php>

Any additional request concerning this course may be addressed to Pierre.Dupont@uclouvain.be