

Postdoctoral project on computer models of learning and evolution of structure in speech

We are looking for someone who has (or who is about to complete) a PhD degree in computer science, artificial intelligence, signal processing, (computational) cognitive science, or equivalent. You will work on a postdoctoral project that is part of Bart de Boer's European Research Council ABACUS project.

The ABACUS project

ABACUS is a European Research Council funded project that attempts to advance our understanding of the evolution of (potentially language-specific) cognitive adaptations for speech. It focuses on combinatorial speech: the ability to combine a limited number of building blocks into an unlimited number of utterances according to learned rules. An important open question is how much of combinatorial speech is due to general cognitive abilities in combination with cultural evolution and how much is due to language-specific cognitive biases. The project combines individual and iterated learning experiments with computational modeling in order to address this question.

<http://ai.vub.ac.be/research/projects/abacus>

The project

The computer and/or mathematical modeling project should contribute to the larger aims of the ABACUS project in providing more insight into the mechanisms necessary for learning complex combinatorial speech or into how they evolved. The project could for instance provide bottom-up insights into the necessary mechanisms for dealing with combinatorial speech, provide means to identify and quantify combinatorial structure in continuous signals, provide a neurologically plausible model for learning speech, or provide a model of how the ability to learn combinatorial speech could have evolved over time. The models could be symbolic, statistical or neural learning models, agent-based models or mathematical models. It is essential however that they address the issues of dealing with continuous signals directly. There is considerable freedom to define the project, and of course we want to make maximal use of the candidates experience. The envisaged starting date would be before June 2014.

Conditions

You apply to a two-year postdoc project with the possibility of a short extension (depending on results and availability of funds). Your salary will be a normal Belgian postdoctoral salary (the exact amount of which depends on age and experience) with all social benefits. There is also a budget for doing research and visiting conferences.

You will work in a recently formed international and interdisciplinary research group. The group is part of the computer science department, but it investigates questions about cognition and language, using a combination of experiment and computer modeling. You will be asked to do a limited amount of teaching and supervision of PhD students, as well as help to popularize the project and its results to a wider audience, but that will take up no more than 20% of your working time.

How to Apply

We need a letter of motivation, a (maximum) one-page research proposal, a CV, a copy of your PhD thesis (or in case you have not completed this, another sample of your writing) and the contact information of two people who can provide references. You can send these in pdf format to bart@arti.vub.ac.be. For inquiries you can send a message to this same address, or phone +32 2 629 3755. The deadline for application is January 15, 2013.

The Vrije Universiteit Brussel

The Vrije Universiteit Brussel has been a leading player in Flemish Higher Education for 40 years. The University has 10.000 students and together with its hospital employs more than 5.500 people.

The following form part of the University's mission:

- the development, the communication and the application of a high level of academic education and scientific research, free from all preconceived ideas;
- the translation of these ideals and knowledge into society in the spirit of social engagement;
- the creation of a society in which everyone is capable of engaging in critical thinking.

Working environment

As an employee of the Vrije Universiteit Brussel you work in a dynamic, diverse and multilingual environment. Both our campuses are set within green oases on the outskirts of the centre of the capital of Flanders, Belgium and Europe. This centre, with all its opportunities, is within reach by public transport in less than half an hour.

Depending on your experience and academic merits you will receive a salary on one of the pay scales laid down by the government. Health insurance and free use of public transport for travel to and from work are standard conditions of employment. If you would rather cycle to work, compensation is also available for that. Both campuses have extensive sporting facilities that are at your disposal and a nursery is within walking distance.

More information is available at www.vub.ac.be under the heading 'future employees'.