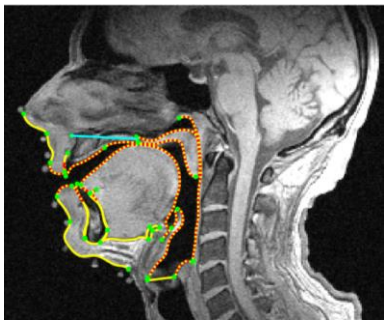
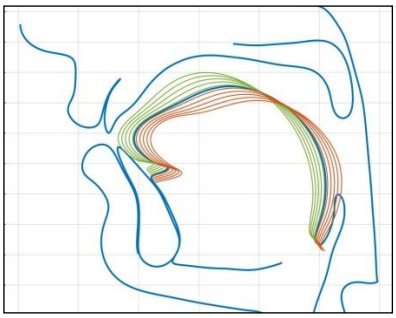
UNIKLINIK RWTH AACHEN Klinik für Phoniatrie, Pädaudiologie und Kommunikationsstörungen

Postdoctoral position: Analysis of vocal tract contours from MRI images for speech disorder characterisation





Highlights

- Characterisation of dysarthria by means of articulatory modelling of the vocal tract from MRI images
- Electrical engineering, biomedical engineering, computer sciences or similar background with emphasis on speech production mechanisms
- Position at the Uniklinik RWTH Aachen (Germany), the University Hospital attached to the RWTH University
- 14 month research fellowship
- Start possible from April 2018, to be negotiated
- Salary according to the public employment regulations in Germany on the scale TV-L 13
- Application deadline on 15th March 2018

Context

The project "*Dysarticulatory Modelling*", funded for two years by the Uniklinik RWTH Aachen, led by the Clinic for Phoniatrics and in collaboration with the Clinic for Neurology, focuses on the study of Dysarthria. Dysarthria is a neurological disorder affecting the control of the speech organ movements, leading to the production of altered sounds reducing speech intelligibility. The purpose of this pilot study is to better understand this disorder by analysing and comparing the articulations produced by dysarthric patients with articulations produced by sane speakers. This will be achieved by imaging the vocal tract using MRI and extracting the contours to analyse them. The results obtained in this study are expected to deepen the knowledge of dysarthria and lead in a longer term to more efficient therapies.

Task description

- Cover all the aspects of the project in collaboration with the main investigator and the involved partners: data recording, data analysis and reporting
- Extract vocal contours from MRI images, derive articulatory models of the vocal tract by means of statistical analysis, compare the results of dysarthric and sane subjects
- Work in a multidisciplinary environment involving among other engineering, medical imaging, statistics, speech sciences, phonetics, speech therapy, speech disorders, neurology and anatomy
- Co-supervise student assistants involved in the project
- Integrate within the research scope of the clinic and develop it by writing project grants for example

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Candidate

- The candidate is expected to hold a doctorate (PhD), or be in a position to conclude it, in the field of computer science, biomedical engineering, electrical engineering, engineering, mathematics or a similar field.
- Prior experience in the field of speech production modelling and knowledge and interest in speech production mechanisms are desired.
- Knowledge of signal and image processing, speech processing, statistical analysis and computer graphics are a significant plus.
- Good programming knowledge in Matlab or similar environment is desired.
- Working language will be either German or English and good written and oral skills in the two languages are desired.

Conditions

- The position will be opened in full-time for 14 months but part-time employment will also be possible on a longer period.
- The work will be conducted at the Clinic for Phoniatrics (https://www.ukaachen.de/kliniken-institute/klinik-fuer-phoniatrie-paedaudiologie-und-kommunikationsstoerungen.html) of the Uniklinik RWTH Aachen (Germany), the University Hospital attached to the RWTH University.
- The salary will be according to the public employees regulations at level TV-L 13 (http://oeffentlicher-dienst.info/tv-l/west/), typically around 2300€ net per month after all tax deductions and medical and retirement contributions.
- Working language will be either German or English

Application

Please send a cover letter and an extended CV to Dr. Antoine Serrurier (aserrurier@ukaachen.de) including a list of publications and names for recommendation. Additional documents (grades, recommendation letters, etc.) supporting the application are welcome.
The deadline for applying is **15th March 2018** and a start can be envisaged as soon as April 2018, to be negotiated.

Contact

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Job description: