Postdoctoral Researcher in AI for Big Data

Massive amounts of information are constantly produced and can be harvested from various sources, ranging from wireless sensor and mobility APIs in smart cities to public open datasets and social media. This data deluge calls for effective methods to extract knowledge from a corpus of time-varying, heterogeneous data. This postdoctoral opening focuses on research around artificial intelligence for big data applications. Specifically, the research revolves around new designs and theory for interpretable deep neural networks, which promote the underlying structure in the data (expressed, for example, by graphs, sparsity or low-rank properties), and perform intermediate fusion of diverse types of data (environmental data, mobility data, social media data). The research covers areas including geometric deep learning, deep unfolding, graph/matrix completion, and interpretable deep learning. The research is driven by big data applications for smart cities (hyperlocal air-pollution estimation, traffic event detection), and social media data analysis (fake news detection, user geolocation).

The position is within the Big Data team (homepages.vub.ac.be/~ndeligia/) at the Department of Electronics and Informatics (www.etrovub.be) at Vrije Universiteit Brussel, Belgium, which specializes on signal processing, machine learning, and information theory for big data acquisition, mining, processing and analysis. The team is affiliated with imec, an international R&D and innovation hub in nanoelectronics and digital technologies (www.imec-int.com/).

The successful candidate will complement the existing team of several researchers working on fundamental and industrial research projects. The key responsibilities are:

- Contributing to the design and development of novel theory and algorithms for multiview geometric deep learning with application in AI for big data;
- Contributing to the design and development of experiments for the validation and fine-tuning of the algorithms;
- Contributing to the preparation of scientific publications and patents;
- Guidance and supervision of junior researchers.

We are especially interested in candidates with the following profile:

- A PhD degree focusing on machine learning, signal processing, computer vision, or information theory;
- An excellent academic record with publications in top-tier scientific journals and conference proceedings;
- Fluency in statistical learning and representation learning, including deep neural networks, learning on graphs, generative models, matrix factorisation;
- Fluency in state-of-the-art machine learning tools (Tensorflow, Pandas, Caffe);
- Fluency in English and excellent scientific writing skills;
- Experience with mobility or environmental data and/or, high-dimensional data, such as image/video data, or social media data (e.g., user graphs, text).

We are offering a two-year position, extendable further subject to performance, including a competitive salary and benefits. The successful candidate will work in an international scientific environment driven by excellence in fundamental research. The position provides a great opportunity to the researcher to work in close collaboration with established companies in the domains of smart cities, mobility, and environmental data.

Interested candidates can send: (i) a detailed curriculum vitae; (ii) a motivation letter related to the position’s profile; (iii) electronic copies of three key scientific publications; and (iv) the names of two potential referees by April 10, 2019 to the following contact person:

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