

PhD Researcher Position in Machine Learning for Visual Data Reconstruction and Analysis

Recent advances in 3D visualization technology — including auto stereoscopic displays, free navigation applications, and virtual reality head mounted devices — provide consumers with a highly realistic visual experience. Producing high-quality video content for such systems requires a highly dense camera arrangement around the scene, which is costly, impractical, and challenging from a data storage and communication perspective. View synthesis from sparse camera setups, namely synthesizing the missing views to generate the dense multi-view content from real-life scenery, is a fundamental research problem that spans various disciplines, including computer vision, signal processing and machine learning.

The big data team at the Department of Electronics and Informatics at Vrije Universiteit Brussel specializes on signal processing and machine learning algorithms as well as distributed systems, which efficiently mine, cross correlate and analyze heterogeneous data sources. In the context of a *Fonds Wetenschappelijk Onderzoek (FWO)* funded project, we aim at developing new machine learning models for the reconstruction and analysis of high-dimensional visual data. In this project, we collaborate closely with researchers from the group of Image Processing and Interpretation at Ghent University.

This PhD Researcher opening is addressing candidates interested in deep learning for multi-view video data reconstruction, representation, and inference extraction. Key responsibilities are:

- Contributing to the design and development of novel scientific algorithms and systems;
- Contributing to the preparation of scientific publications and patents.

We are especially interested in candidates with the following profile:

- A Masters degree in Electrical Engineering, Computer Science, Mathematics;
- Knowledge of statistical learning, machine learning, neural networks, deep learning, sparse coding and representation learning;
- Experience with state-of-the-art machine learning tools (Pylearn, Tensorflow, Theano, Pandas, Caffe);
- Fluency in English and very good writing skills;
- Experience with high-dimensional image/video data is a plus.

The position is supported by a full PhD scholarship plus benefits (laptop, public transport subscription). The successful candidate will work in an international scientific environment driven by excellence in research and industrial valorization. The position provides a great opportunity to work with experienced researchers in the field of data analysis and to collaborate with an international network of top-tier academic and industrial partners.

Interested candidates can e-mail: (i) a detailed curriculum vitae; (ii) a motivation letter; (iii) BSc and MSc transcripts of grades and the MSc thesis, and (iv) two references to the following contact person:

Prof. Dr. Nikos Deligiannis

Department of Electronics and Informatics

Vrije Universiteit Brussel

<http://homepages.vub.ac.be/~ndeligia/>

Tel.: +32 2 629 1683

Email: ndeligia@etrovub.be