

PhD researcher on “advanced Big Data management platforms”

About iMinds

iMinds is an independent research organization whose task, assigned by the Flemish Government, is to encourage Innovation through excellent Digital Research. Along with strategic research programs, iMinds offers companies and organizations active support in research and development and, for that purpose, stimulates companies, authorities and non-profit organizations to work together on IT research projects. iMinds also offers programs to inspire, train and coach the next generation of IT entrepreneurs. The goal of iMinds’ incubation & entrepreneurship program is to bring IT innovations to the market, either by helping to build and grow successful high-tech IT ventures or by driving innovation in industry partnerships and collaborative research.

iMinds Research consists of more than 850 researchers working at the 5 Flemish universities (Ghent, Leuven, Brussels, Antwerp and Hasselt). It is an international, multidisciplinary research environment with top talent coming from more than 50 countries throughout the world.

Function description

The IBCN (Internet Based Communication Networks and Services) research group performs research in the area of next-generation intelligent distributed systems. Besides fundamental research, we are active in projects at national and European level with industrial and academic partners.

We have currently a job offer for a full-time PhD researcher to support our novel research track on Big Data management.

Big Data management

In a world of continuously expanding amounts of data, retrieving interesting information from enormous heterogeneous data sets becomes more complex every day. Big Data computing platforms therefore need the ability to stream, analyse, store and monitor large amounts of information.

A Big Data management platform that meets these requirements is being built in-house at the IBCN research group (Tengu, <http://tengu.intec.ugent.be>). Tengu is inspired by the Lambda architecture, which combines both real-time and offline data computing aspects and allows to integrate important data store (such as MySQL, Elastic, Cassandra), processing (such as Apache Hadoop, Spark and Storm) and cloud technologies (such as OpenStack). The platform can be instantiated automatically due to the underlying configuration management (using Chef) and is accessible through a RESTful API.

Tengu is being used in many research projects, focusing on data-intensive application domains, such as abuse detection on social media sites, recommendations for and monitoring of large festival crowds, security log analysis, document management and automated real-time classification of news items.

An interesting trend in the world of Big Data management is the introduction of a Cognitive Computing approach, where self-learning systems are used to automatically solve complicated problems without human oversight. Cognitive Computing approaches can be applied both in knowledge representation and for platform resource optimization.

Responsibilities

- You will conduct research on future Big Data management architectures, in the framework of national and European research projects.
- You will analyse Big Data management architectures and corresponding storage and processing technologies.
- You will build up hands-on experience by implementing novel cognitive Big Data management algorithms and by evaluating these through emulation on the Tengu test bed and through detailed simulations.
- You publish and present results both at international conferences and in scientific journals.
- This research will lead to a PhD degree, if the candidate meets the expectations and obtains good evaluations. Throughout the complete research period, you receive a full-time, attractive salary.

Profile

- You have a master degree in computer science, informatics or electrical engineering.
- You have interest in big data and cloud technologies.
- You have analytical skills, you are well-organized and are able to autonomously execute the tasks that are assigned to you.
- You have good communication skills in English.
- You have proven experience in software development (e.g. student projects, master thesis, or work experience in software development).

Our offer

We offer a challenging, full-time position in an inspiring, flexible and dynamic environment. You will join a young and enthusiastic team of developers, researchers, post-docs and professors. You will receive a competitive salary. This full-time position is available immediately.

Procedure

Candidates should send their CV and a motivation letter to Prof. Filip De Turck (filip.deturck@intec.ugent.be) and Dr. Tim Wauters (tim.wauters@intec.ugent.be). Selected candidates will be contacted for an interview (remote interview possible for international applicants). International applicants are to provide one or more reference letters.

Deadline for application is October 31st 2015.