Vakgroep **Informatietechnologie**

Gent, December 16th, 2015

Dear,

We would like to point your attention to an interesting job opening at Ghent University/iMinds. We have a vacant PhD position for research in the field of Cloud Robotics.

iMinds is a research institute for ICT innovation in Flanders (www.iminds.be) and one of the key innovative players in Belgium. The reseach is aimed at valorisation and is performed in close cooperation with industrial players: big companies like a.o. Alcatel-Lucent, Belgacom, Deutsche Telekom, Nokia-Siemens Networks, Telenet; small and medium sized enterprises like a.o. Androme, BeMobile, Comsof, DigiPolis, OneAccess, Televic, ZapFi; as well as non-profit organizations.

The research Group IBCN (Internet-based Broadband Communication Networks and Services www.ibcn.intec.ugent.be) is one of the research groups at iMinds, active in different research domains. The IBCN group is performing fundamental and applied research on internet-based communication networks and services, more specifically with the focus on: (1) Network Modeling, Design and Evaluation, (2) Mobile & Wireless Networking, (3) High Performance Multimedia Processing, (4) Autonomic Computing & Networking, (5) Service Engineering, (6) Content and Search Management, and (7) Data Analysis and Machine Learning. A well-established experimental test environment and a number of technology platforms support these activities. One of the key domains is the design of future Internet solutions in order to accommodate the future requirements in terms of growing bandwidth, delay, quality-of-service, security, new service models, etc.

In order to perform high-quality research at iMinds (within the IBCN research group) we are looking for motivated reseachers with excellent technical and analytical skills.

If you are interested in this job opening and your profile corresponds to the description attached, please send your resume as soon as possible to Prof. Pieter Simoens.
Universiteit Gent – INTEC
Gaston Crommenlaan 8, bus 201, 9050 Gent
e-mail : pieter.simoens@intec.ugent.be

Kind regards,

Prof. Piet Demeester
Head of the IBCN research group

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PhD researcher – Adaptive robots in the Internet-of-Things

Providing the missing link between the digital and physical world, connected smart objects have tremendous potential to improve our Quality of Life. In the future, people will be surrounded by a swarm of smart devices, having moderate computational power and operating semi-autonomously and in real-time on sensor data and context information provided by the network. With omnipresent handheld devices and ongoing roll-outs of sensors in homes; offices; factories and cities is, the next step in this evolution is to deploy service robot to assist in our activities of daily living.

Today's robotic applications are typically executed in well-controlled environments. However, our everyday environment is dynamic, large and unpredictable. The operational conditions of a robot are thus close to impredictable during the robotic design phase. Instead, robots should be able to discover their current context, evaluate available external resources (e.g. cloud, IoT devices, sensor networks) and adapt the task execution strategy accordingly. The adaptation strategy should leverage external information and processing capabilities, provided by sensor networks, IoT devices and cloud computing.

Function description

The goal of this PhD is to realize a scaling-out of robotic capabilities by interfacing with the IoT and external resources to enable software adaptation.
- You analyze and keep track of the state-of-the-art in cloud robotics and adaptive robotic intelligence
- You design the architecture and interfaces to flexibly deploy software components onto a robot or onto an edge gateway, thereby extending on existing technologies developed inside and outside our department
- You research new models to advertise the dynamic capabilities and resource availability of robots and sensors
- You model the performance of task execution strategies in terms of resources (on-board and external) for a number of well-selected use cases.
- You design new matchmaking algorithms for mapping the available resources (on-board and external) onto the most suitable task execution strategy.
- You demonstrate your work in a demonstrator deployed in the iMinds Smart Office or Smart Home test facilities (http://ilabt.iminds.be/homelab .
- You share your results with the community by regularly publishing and presenting results at international conferences and scientific journals listed in the Web Of Science.

Your profile

We are looking for candidates with the following qualitifications and skills.

- You have (or will receive within a few months) a Master's degree in Computer Science, Electronics or Informatics.
- Experience and a strong interest in robotic, IoT and cloud technologies are a plus but not necessary.
- You are able to plan and carry out your tasks in an independent way. You have strong analytical skills to interpret the obtained research results.
- You are a team player and have strong communication skills.
- You are able to commit to timing and milestones set forward by different research projects.
- Your English is fluent, both speaking and writing.

Our offer

We offer a challenging, stimulating and pleasant research environment, where you can contribute to the worldwide research for the Future Internet. The work is done in close collaboration with key European ICT and telecom industry players. Throughout the complete PhD period, you receive a full-time, attractive salary and various additional benefits.

Interested ?

Please send your motivation letter and a detailed curriculum vitae to pieter.simoens@intec.ugent.be. Your CV should contain a short abstract of your master thesis work, as well as a list of reference contacts.
Please indicate "Application: PhD Research in Adaptive Robots in the IoT" as subject of your e-mail.
Applications are received until January 15, 2016.

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