Job Offers

Title

Three ESR positions at Universidad de Valladolid for the completion of a PhD in the context of the H2020 MSCA IoTalentum project: network control and multi-access edge computing

Description of job offer:

We are pleased to announce the opening of **three Early Stage Researchers (ESRs) positions at Universidad de Valladolid, UVa (Spain)** to carry out **PhD theses** within the **IoTalentum project (www.iotalentum.eu)**. IoTalentum is a European Training Network (ETN) funded by the European Commission under the **Horizon 2020 Marie Sklodowska-Curie Action (MSCA)**. The MSCA ITN programme offers **highly competitive and attractive salary and working conditions**. IoTalentum establishes a well-balanced Innovative Training Network (ITN) of ten beneficiaries (six universities and four companies) and four industrial partner organizations from eight countries.

Applications are invited from suitably qualified candidates **for full-time fixed-term positions (36 months)** as an **Early Stage Researcher (ESR).**

The global **research objective of IoTalentum** is to develop the next generation of IoT producing coordinated advantages in the area of infrastructures and cybersecurity and use it for the development of any application of next generation of IoT, and, in particular, those of smart grids.

IoTalentum will train the recruited ESRs through an **outstanding training program** that includes coordinated research in different IoT fields. The **ESRs will be enrolled in UVa ICT PhD program** (applicants have to fulfil entry conditions of that program). Moreover, they will enjoy **10 months secondment(s)** in the workplace of other consortium partners (ensuring that each ESR stays at least **eight months at industry**). Moreover, IoTalentum also offers a **continuous educational backbone** over the whole duration of the project.

Title and objectives of the three positions offered:

- **ESR3: AI-based control method for the optical backhaul of IoTalentum**
  Objectives: To design new planning and operation methods based on Artificial Intelligence (AI) for multi-core and elastic optical backhaul networks of the IoTalentum architecture. To design methods for integration of optical control of access and metro segments. To exploit AI techniques to improve the overall network performance in terms of latency, throughput, cost and energy consumption. To implement a use-case to demonstrate some of those methods in the UVa GPON testbed.

- **ESR5: SDN for network virtualization in IoTalentum infrastructure**
  To develop planning and software-defined network (SDN) control algorithms and techniques for IoTalentum networks. To integrate network function virtualization (NFV) in scenarios with distributed computing resources (MEC, multi-access edge computing), by means of SDN-based control mechanisms.

- **ESR7: Cognitive orchestrator of MEC and network resources**
  To develop cognitive control methods based on SDN to operate the IoTalentum architectures (MEC and the underlying network) with the objective of reducing cost and energy consumption of the infrastructure. To develop algorithms for load and virtual machine balancing in order to

provide Infrastructure as a Service (IaaS) and Software as a Service (SaaS) to final users and objects. To integrate and test the IoTalentum distributed computing infrastructure in the DREAM-GO mock-up.

Offer:

- Selected candidates will have a **full-time employment** contract for the **duration of 3 years (36 months).**
- The ESR will be contracted according to **Spain national rules with full social security benefits**.
- **37.5 hours/week** with flexible schedule.
- In accordance with the MSCA regulations for ESRs, the salary for selected candidates is constituted by a generous living allowance, a mobility allowance and a family allowance (depending on family situation).
- **Gross salary: around 35,000 €/year**[1] (including living and mobility allowance) **plus 4,000 €/year** (for those who comply with the family requirements)

Why Apply?

The benefits of being an ESR of IoTalentum include:
- You will **work in a stimulating, creative and internationally learning environment** through a **unique interdisciplinary research training program**.
- You will be **enrolled in a top-quality PhD program**.
- IoTalentum training program offers unique, leading edge **infrastructure and expertise**, which is not available at a single place.
- You will be **advised by excellent group leaders** – they are all outstanding in their research and trainings.
- The IoTalentum consortium was generated with the firm purpose of **training ESRs so that you can enter the labour market** both in academic and non-academic environments.
- You will be **exposed to very different and complementary research environments** in both academia and industrial participating organisations.
- You will spend **30% of their recruitment time in different institutions of the network**. ESRs will enjoy **secondments of at least eight months at industrial** beneficiary or partner organization.
- **Strong involvement of industrial** partners in training activities.
- You will have the opportunity to acquire **outstanding complementary training in transferable skills** (e.g. presentation techniques, networking, publishing, and outreach activities) as well as leadership, innovation and entrepreneurial skills.
- You will have the opportunity to **acquire lifetime skills** and optimum opportunities to build and **extend your international network** available to you throughout your professional career.

Eligibility Criteria

The applicants must, at the date of the call deadline, comply with the following eligibility criteria:
- **To hold a MSc degree** (or equivalent) in (ICT, Telecommunications, Electronic, Electrical, or Computer) **Engineering, Mathematics, Physics or a related field**.
- To have **not been awarded a doctoral degree**.
- At the time of recruitment by the host organization**, you should be in the first four years** (full-time equivalent research experience) of **your research career**.

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[1] Note that the mean gross salary in Spain for full-time employment contract: 28,000 €/year.

- You must comply with the European Commission's mobility rule, meaning at the time of recruitment by UVa, you must **not have resided or carried out your main activity** (work, studies, etc.) **in Spain for more than 12 months in the 3 years immediately before** the starting employment contract date. Compulsory national service and/or short stays such as holidays are not taken into account.
- **The positions are open to all nationalities**.
- To be **proficient in English** language.

Desired Skills

The following merits will be assessed (if there is documentary evidence):

- Knowledge about **communications networks and/or machine learning techniques**.
- Experience in **programming** and knowledge of programming languages.
- **Journal/conference papers** related to the job topics.
- Journal/conference papers in other fields from the area of engineering or mathematics.
- **Other research merits**.

Main Supervisors

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Dr. Ramón J. Durán Barroso
rduran@tel.uva.es
IoTalentum Coordinator
https://orcid.org/0000-0003-1423-1646
https://www.linkedin.com/in/rjduranbarroso/

Dr. Ignacio de Miguel
ignacio.miguel@tel.uva.es
Training Coordinator
https://orcid.org/0000-0002-1084-1159
https://www.linkedin.com/in/idemiguel/

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Application Procedure

- Read **Euraxess job offer**
- Read the **guide for applicants** in IoTalentum webpage (http://www.iotalentum.eu/vacancies). You can find the complete description of the selection process there.
- **Complete IoTalentum Application Form** (http://www.iotalentum.eu/vacancies).
- **Send your application as well as the evidence of merits to pmt@iotalentum.eu. E-mail subject: 'Iotalentum – application ESR number (3, 5 or 7)'.**

Application Deadline

The deadline for applying to UVa positions is 15ᵗʰ January 2021 (23:59 CET)

Any question can be sent to IoTalentum Project Management Team: pmt@iotalentum.eu