SMARTi
European Training Network
2017-2021

Early Stage Researcher with PhD enrolment

Sustainable **M**ulti-functional **A**utomated **R**esilient **T**ransport **I**nfrastructures **ETN** will bring together a stimulating platform where the stakeholders of the transport infrastructure sector will work alongside world-wide experts in smartening of systems (developers of high-tech sensors, advanced monitoring equipment, automated structures, etc.,) with direct support from road, railway and airport managers. As a result, SMARTI ETN will create a new generation of highly-skilled and innovative professionals that will be in great demand in this rapidly expanding field and will benefit Europe and developing countries. *Do you want to be one of them?*

Project 13

"Sat-Mon" – Satellite Monitoring of Traffic Loading on Bridges (WP3-ESR1)

Gavin & Doherty Geosolutions Ltd (Ireland)

GDG
GAVIN & DOHERTY
GEOSOLUTIONS

Expected Collaborators

Research Driven Solutions (Ireland), ELAB SRL (Italy), The Polytechnic University of Hong Kong (China)

Project Summary/Objectives

The goal is to use satellite images to quantify the traffic loading on long-span bridges. The critical load condition for these bridges is congestion and the images will be analysed to determine the patterns of traffic during congestion – the gaps between trucks and the car/truck mixes. Vehicle length will be found from the images and the correlation between length and weight will be used to estimate the loading on the bridge. The longest bridges in the world are currently designed using very simple approximations that assume long lines of trucks at minimum gaps. This project will revolutionise the way in which the loading on these bridges is considered.

Environment

The research is carried out within the framework of the Marie Curie European Training Network 'SMARTI' with opportunities to join network wide training events and international collaboration. The candidate will work within Work Package SMARTI Guidelines which investigates innovative transport infrastructure modelling and methodologies for the creation of guidelines for road and railway management. Furthermore the candidate will benefit from collaborative research with 14 similar research positions in the network.

The project will be developed through planned international collaborations with at least two international partners. The candidate will be recruited by Gavin & Doherty Geosolutions, who are a specialist geotechnical, structural and civil engineering consultancy. The ideal candidate will have some prior experience of engineering consultancy and design. The partnership with strategic partners will provide:

- Research Driven Solutions: image analysis training and research in collaboration with Department of Computer Science of UCD
- ELAB: Advanced image analysis
- The Polytechnic University of Hong Kong: The field calibration and validation will be done at the Transport Department of the Government of Hong Kong Special Administrative Region in association with Hong Kong Polytechnic University.

The successful applicant will be recruited by Gavin & Doherty Geosolutions (GDG) and will be based at their office where they will get the opportunity to interact with a team of highly qualified experts working across a wide range of sectors. Simultaneously, the researcher will register for a 3 year PhD at University College Dublin in Ireland. The total funding available for each position is in line with the Marie Curie ETN Scheme, and comes to €37320 per year. This amount will be multiplied by a country factor[1] and on top an extra allowance will be available to cover mobility expenses. The fellows will pay taxes according to the rules of the country of recruitment.

Application Process

(1) **SMARTI ETN** will perform the recruitment of all the Early stage Researchers (ESR) through **smartietn.eu** website

(2) Check you meet Eligibility criteria and Specific requirements for the ESR position project/s you are applying for.

(3) Prepare the following application documents (in English):

1. A curriculum vitae, including contact details, education (at University level and other), work experience, prizes/awards, language skills, etc… (max. 2 pages). The CV should reflect a representative array of achievements and qualifications appropriate to the post for which application is being made.
2. Official academic record of undertaken courses & grades for Bachelor (and Master if required in specific criteria) degree.
3. A motivational letter in which the applicant describes his or her motivation to pursue postgraduate studies and to conduct the research project/s applied for. Mention the ESR project number or numbers (in the latter indicate order of preference if any) on your motivational letter and the subject of the email.
4. A reference letter.

(4) Upload your documents in smartietn.eu before the 1st June 2017 deadline.

(5) The documents provided will be used to select the best candidates. Applications will be analysed by a **selection committee led by the coordinator and formed by both academic and industry partners**. Recruitment procedures will be open, efficient, transparent and supportive, as well as tailored to the type of positions advertised. All Institutions value diversity and are committed to equality of opportunity.

[1] Ireland factor = 1.135

Eligibility Criteria

- Applicants shall be from the European Union. They are required to undertake transnational mobility (i.e. move from one country to another) when taking up their appointment. Nationality is therefore not a criterion. Rather the location of the researcher's residence or main activity during the 3 years prior to their recruitment is determining. (*This means: You can only apply to a project which is hosted in a country in which you did not reside or carry out your main activities (such as work or study) for more than 12 months within the last 3 years. This excludes short stays such as holidays or compulsory national service*).
- Applicants must be Early-Stage Researchers (ESRs) which means that, at the time of recruitment by the host organisation, they must be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree. Research experience is measured from the date that the graduate has been awarded a degree allowing him/her to embark on a PhD programme (e.g. date of completing a masters degree).

Specific Requirements

	Essential	**Desirable**
Qualifications/ Education	Master's degree in Civil, Structural or Mechanical Engineering (or cognate discipline), qualifying the candidate for PhD studies. At the time of recruitment, candidates must be in the first four years of their research careers (full-time equivalent research experience after qualifying degree) and have not yet been awarded a doctoral degree	
Skills/Training	• Good software capabilities and numerical skills. • Good organisational skills and project management expertise. • Actively manage other stakeholders engaged in the research; also an ability to identify and set achievable targets and deliver to these deadlines.	
Experience	• Willingness to think out-of-the-box and use background to adapt into a new context	• Some past experience in a civil/structural/geotechnical engineering consultancy company (+2 years of engineering design) • Already worked within a research team

		• Scientific Papers published
Personal Qualities	• Ability to work independently • Ability to work efficiently in a team • Pro-active • Good communication skills	
Other	• Fluent in oral and written English. (IELTS ≥ 6.5 with a minimum of 6.0 in each element – required for enrolment as a PhD student in University College Dublin) • Ability to present scientific work in oral and written format.	

Do not wait, apply for this position via the following link
smartietn.eu

Any question on:

- this specific project, contact Paul Doherty from GDG, pdoherty@gdgeo.com , and Eugene O'Brien, eugene.obrien@ucd.ie
- the SMARTI ETN project, contact Dr Davide Lo Presti, Davide.Lopresti@nottingham.ac.uk