

PDEng position at ASPARi - Developing Real-Time Process Control Systems for Road Construction

Specifications

Location:	University of Twente – Enschede
Faculty:	CTW
Chair:	CME
Function type:	PDEng position
Scientific field:	Civil Engineering
Prior education:	MSc in Civil Engineering/Industrial Engineering/Advanced Technology or a relevant discipline
Hours:	40 hours per week
Salary:	€ 1.715 gross per month
Starting date:	ASAP
About employer:	http://www.aspari.nl and www.utwente.nl
Project leader:	Dr. S. R. Miller

Would you like to be part of the development of higher quality roads? Are you interested in high-end technology? Then, the Professional Doctorate in Engineering (PDEng) programme is for you. The PDEng is a 2-year post Master Degree technological designers programme. This programme at the University of Twente contains an educational part that will be followed at the University, and a design project that will be carried out at ASPARi network companies. The educational programme will have an in-depth and broadening character with ample attention for professional development. In collaboration with the external organisation, high level, creative and new designs for complex issues will be aimed at.

The Challenge

The asphalt construction industry is one perceived to be based on tradition and custom where work methods are largely based on implicit knowledge and experience. In response, many equipment manufacturers currently provide sophisticated technological solutions (e.g. GPS on rollers) that promise improvements to the asphalt construction process. However, these new sensors and gadgets are largely not being used by operators mainly due to process information not being available in real-time.

To support operators in achieving a more consistent, method-based asphalt compaction process, there is a need to provide data and visualisations in real time. This move towards real-time process control brings along a set of challenges including dealing with large data sets, processing continuous data streams on the fly and the integration of contextual data such as weather conditions and asphalt mix temperature.

The mission of the design project is to:

“Develop an integrated real-time support system (data processing and visualisations) that will support roller operators achieve a more consistent compaction product”

The system should include the following components:

- Early warning software system that identifies preventable process variability
- Decision support module enabling real-time information flow between operators and other key site personnel
- Permanent georeferencing module for post-construction analysis

During the educational part of the programme, you will receive a customised education package consisting of among others, courses in systems engineering, statistics, structural equation modelling, building information models and decision support system design.

Our offer

We offer a full-time contract for 24 months with a salary of € 1715 per month. During these two years you follow a tailor made post-master design programme with a combination of education (50%) and working on a design project (50%). Also, the University of Twente provides excellent facilities for professional and personal development, a holiday allowance and an end-of-year bonus. On successfully completing the programme, you will receive a certified and recognised degree. You will be entitled to use the academic degree Professional Doctorate in Engineering (PDEng) and will be registered as a Technological Designer in the Dutch register kept by the Royal Institution of Engineers in the Netherlands (KIVINIRIA).

Candidate profile

We are searching for the best MSc graduated candidates with a demonstrable affinity with design and multidisciplinary assignments. Besides, you must have the ambition and talent to accelerate in finding solutions / creating designs for complex civil technological issues with a multidisciplinary character. Important professional skills are Dutch and English language skills, communication and interpersonal skills, teamwork, initiative and self-reflection. Prior knowledge in software development and decision support system design will be helpful to successfully complete the project, but can also be part of the educational program. An interview will be part of the selection procedure.

Information and application

If you have any further questions about this vacancy of the PDEng programme in Civil Engineering, please contact Dr. Miller at s.r.miller@utwente.nl or telephone: 053 489 5886. General information about PDEng programmes you can find at <http://www.utwente.nl/pdeng/> or <http://www.utwente.nl/pdeng/en/>

Please send your application, with a curriculum vitae, a list with grades of courses attended, references and, if applicable, a list of publications before 10 January 2015 through the link http://www.utwente.nl/vacatures/intern/vacatures_intern/