

Opening

In the context of a KWR project in collaboration with Philips Healthcare, LaQuSo has an opening for a researcher in the area of process mining.

At Philips Healthcare, Cardio Vascular systems are complex medical machines consisting of thousands of replaceable parts and a multitude of different processing nodes. Good performance and robustness of the system improves the up time or availability of the systems which is important for clinicians to smoothly perform interventional procedures, for hospitals to optimize healthcare costs and of course it is important for patients. The system operations (normal and abnormal and usage) are documented in system logs during each day for all systems in the field and result in large amount of technical data (3GB/day). The efficient use of this data to diagnose and optimize system utilization; or remotely manage the system is not trivial because of high complexity of the machines, the fact that many things happens in parallel and complex relations between parts.

The goals of this project are to improve system diagnostics and remote management with new advanced process mining techniques to determine and extract relevant information from the data set. New modeling techniques are needed to relate this information to failure/service models.

Possible applications (a.o.) are: automated failure diagnostics based on patterns found in the system information; wear out modeling based on patterns in the system information; utilization reporting to optimize system usage; pay ay per use, can we relate wear out or service costs to system usage.

New more efficient algorithms are required in order to increase the scope of the processed data (parameters).

Requirements

Candidates for this function should have a PDEng (in areas such as Software Technology) or a PhD degree (in areas such as Computer Science) and shall have the ability to use and extend advanced process mining techniques to harvest the required information from the data and deploy this in real life situations with real data. A team player is required since multiple people are working on this topic, and different data sources are to be combined. Since the work will take place within an innovation department of Philips Healthcare, a “self supporting innovator” attitude is required.

Position

LaQuSo is offering a position as researcher (UFO category “Onderzoeker”) at the Department of Mathematics and Computer Science of Eindhoven University of Technology for a period of 1 October 2009 until 31 December 2010. Employment and salary are in accordance with the Collective Labor Agreement of the Dutch Universities (CAO NU).

Information

For more information, please contact H.T.G. Weffers (h.t.g.weffers@laquso.com, +31 40 247 2526)