Monday, January 13, 2014

Activity Report for Francisco Sant'anna stay at Chalmers University of Technology

Francisco Sant'anna worked with us in the project entitled "Céu: A Reactive Programming Language for Wireless Sensor Networks", which is a joint work between Chalmers/Sweden and PUC-Rio/Brazil. More specifically, he focused on the following in his work:

- Implementation of WSN protocols:
  Using the reactive language Céu (main subject of his PhD studies) to implement existing and real-world network protocols for Wireless Sensor Networks. The goal was to experiment with the language as an alternative to existing languages in this context.
- Language improvements:
  Based on the experience with the protocols, add new features to the language. For instance, support for dynamic allocation in Céu was much improved during this period.
- Evaluation of the language:
  Measure quantitative (e.g. memory usage) and qualitative aspects (e.g. code safety) when comparing Céu with existing languages for WSNs.
- Interacting with SAAB:
  Attending two workshops organized by SAAB in Stockholm and Linköping to interact with Swedish scholars and SAAB employees. His work with Céu was presented in one of these meetings.

The joint worked helped to strongly deepen our collaboration with PUC-Rio. Moreover, the work culminated with a published paper in "ACM SenSys'13", which is the highest-impact conference in the area of Wireless Sensor Networks.

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The full title of the paper is:
Safe system-level concurrency on resource-constrained nodes
Francisco Sant'Anna, Noemi Rodriguez, Roberto Ierusalimschy, Olaf Landsiedel, and Philippas Tsigas
In Proceedings of the 11th ACM Conference on Embedded Networked Sensor Systems (SenSys '13) ACM, http://doi.acm.org/10.1145/2517351.2517360

Please do not hesitate to contact us when you have further questions about Francisco Sant'anna stay at Chalmers University of Technology or our collaboration with PUC-Rio.

Yours Sincerely,

Philippas Tsigas

Professor

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