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The Department of Automatic Control & Systems Engineering
is pleased to announce the following seminar:

Evolutionary Robotics Moving Towards Real Hardware

Professor A E (Gusz) Eiben

Head of the Computational Intelligence Group

Department of Computer Science

Vrije Universiteit Amsterdam

Tuesday, 24 November 2015 at 14:00

LT2, Sir Henry Stephenson Building

Abstract

As outlined in my recent paper [1], the field of evolutionary computing is entering a new phase as evolutionary algorithms that take place in hardware are developed, opening up new avenues towards autonomous machines that can adapt to their environment. In this talk I discuss a vision and a research programme about artificial evolution in physical, rather than digital, spaces. I outline the concept of EvoSphere, a robotic ecosystem that evolves in real space and real time and review ongoing activities towards the first proof-of-concept implementation. I argue that constructing systems of self-reproducing machines will lead to a new, exciting mix of evolutionary computing, robotics, and artificial life with new challenges and opportunities

[1] A.E. Eiben and J. Smith, From evolutionary computation to the evolution of things, *Nature*, 521:476-482, 2015

Biography

Gusz Eiben is full professor in Computational Intelligence at the VU University Amsterdam. He is one of the European pioneers of evolutionary computing, co-author of the best selling book *Introduction to Evolutionary Computing* (Springer, 2003, 2007, 2015), editorial board member of several related journals, and Specialty Chief Editor *Evolutionary Robotics* for *Frontiers in Robotics and AI*. He has done research on evolutionary operators, evolutionary art, offline and online optimization of evolutionary algorithm parameters, and evolutionary robotics. His most recent work addresses physically embodied evolutionary systems.