COMPUTER SCIENCE
DEPARTMENT COLLOQUIUM

Biological and Computational Principles for Creating Self-Evolving Software

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Abstract:
Self-evolving software systems are a promising frontier of computing. While it is only in recent years that computer scientists and engineers have started building such systems, many biological examples in nature possess the traits and principles that we seek our artifacts to exhibit. The talk will give an overview of some of the evolutionary, organizational and self-regulatory principles that we currently know work in nature, along with an overview of those that already have a computational embodiment. A brief survey of state of the art and current efforts in this area will be given as well as pointers to potential applications that can take full advantage of the new capabilities of self-evolving systems. The talk concludes with future directions for research and development to advance this promising area.

Biography:
Dr. Ashraf Saad is an associate professor of Computer Science at Armstrong Atlantic State University, in Savannah, Georgia. Between 2001 and 2006 he was on the faculty of the School of Electrical and Computer Engineering at the Georgia Institute of Technology, in Savannah, where he developed and taught a graduate level course on intelligent systems. He obtained his PhD degree in Electrical and Computer Engineering in from Vanderbilt University, where he was member of the Intelligent Robotics Laboratory. His industrial experience includes working at R&D laboratories and research organizations in France, Japan and Spain. He is a senior member of the IEEE and member of the ACM and ASEE professional societies. He can be reached at: ashraf.saad@armstrong.edu.