Weekly Research Seminars

Seminar Details Form

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<th>Wasan Awad</th>
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**Title of the talk**

GP- based Cipher Systems Design

**Abstract of the talk**

Evolution is an optimization process, where the aim is to improve the ability of a system to survive in dynamically changing environment. There are a number of evolutionary computation techniques, such as genetic programming (GP). In GP, the population individuals are computer programs represented usually as expression trees. One of the complex problems that can be solved by GP is designing cipher systems automatically. Stream cipher is an important encryption technique used to protect private information from unauthorized access, and it plays an important role in the communication and storage systems. In this work, we propose a new approach for designing stream cipher systems of the desired properties, such as high degree of security and efficiency. Three algorithms are presented here, which are simple genetic programming, simulated annealing programming, and adaptive genetic programming. Experiments were performed to study the effectiveness of these algorithms in solving the underlying problem.

**Keywords**


**Short Biography**

Wasan Awad, Associate Professor of Computer Science. She is holding BSc., MSc, and PhD degrees in Computer Science. Dr. Wasan joined University of Bahrain in September 2002 as Assistant Professor of Computer Science, and in 2012, she promoted to be Associate Professor of Computer Science. She joined Ahlia University in September 2014 as Associate Professor of Computer Science. Dr. Wasan has 17 years undergraduates teaching experience in computer science and information systems, and seven years post graduate teaching and supervision experience, with more than 30 postgraduate students supervision. She has very good experience in problem solving and algorithms design, computer programming, information systems development and software engineering, most computer applications, research and development in computational intelligence, coding theory, and information security. Furthermore, she has good experience in
preparing academic programs, scientific and project planning and administration, and experience in the academic programs QA and accreditation.

Dr. Wasan published papers in different fields of computer science and IT in a number of international journals and conferences. She also serves as a member of the editorial boards in a number of international journals and conferences.

She served Bahrain Community by, for example, publishing a number of articles in the newspapers, delivering a number of training courses, developing and improving academic programs of other universities, being a consultant for ministry of social development, and chairing sessions in a number of Bahraini conferences.


Dr. Wasan is a member of a number of Scientific and Professional Societies, such as, IEEE, ACM, Machine Intelligence Research Labs (MIR Labs), and Internet Society.