IEEE – Computational Intelligence Society - Colombia Section

Distinguished Lecturer Program

2018 Report

Speaker: Prof. Alice E. Smith

Date 1: September 15h **Date 2:** September 17th

Location 1: Universidad de los Andes, Bogota **Location 2:** Universidad de Antioquia, Medellin

Annually, IEEE CIS Colombia Chapter organizes a one-day academical event with the purpose of discuss recent advances in computational intelligence and related areas. In addition, Colombia Section recently has launched the IEEE Vehicular Technology Society Chapter and has prepared an open talk series to publicize the new organizational unit and call new volunteers interested in working in these areas. The Universidad de los Andes (Bogota) has been the sponsorship of both initiatives and by multiple media channels all IEEE members and public in general was invited to participate.

Lecture title: Evolutionary Multi-Objective Optimization

Abstract: This is a tutorial presentation on multi-objective optimization with emphasis on effective methods for genetic algorithms, particle swarm optimization and tabu search when handling more than one objective. Topics such as niching, fitness sharing, Pareto ranking, elitism and selection are discussed. Example applications are given from the optimization of reliable systems, facilities design, and the location of facilities.

Finally, Prof. Smith was supporting us in a second opportunity during the first conference organized by our chapter, Colombian Conference on Applications in Computational Intelligence, carried out from May 16th to 18th in the Universidad de Antioquia. For this event, all IEEE CIS members was invited to participate openly in the talk.

Lecture title: Decision Science Inspired by Nature

Abstract: This talk will discuss using computational approximations of natural systems for decision science. These paradigms range in fidelity with their natural systems inspirations but all seek to leverage the structures and operations of nature doing what it does best – novelty detection, system optimization, adaptability to dynamic environments, robustness, and flexibility. More specifically, the well-known, but often misunderstood and misused, natural system computational paradigms of artificial neural networks, fuzzy logic, and evolutionary algorithms will be considered for use in decision science. Used judiciously and knowledgeably these approaches can offer significant advantages in diverse decision environments. A curated selection of diverse applications from the speaker's more than 20 years of experience in this field will be explained and objectively analyzed.

Both events had the expected impact with respect to the current number of members of the Society and the Institute which are spread throughout the country. We appreciate the support provided by the Society through its Distinguished Lecture program and Prof. Alice Smith. We hope to continue developing this type of events on a regular basis.


ColCACI2018
Medellin, Colombia
May 16th - 18th
IEEE
Ciencia de la toma de decisiones Inspirada por la naturaleza
Alice E. Smith


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