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The IEEE Computational Intelligence Society (CIS) Vietnam Chapter's Report

I. Introduction

The IEEE Vietnam Section Computational Intelligence Society (CIS) Chapter is an avenue for Vietnamese researchers in Computational Intelligence (CI) to exchange and collaborate on research issues. It was officially established on 19 February 2011 by IEEE and the inaugural ceremony was held on 16 May 2011 at the Hanoi University of Science and Technology with the present of Prof. Gary Yen, the IEEE CIS president at the time and Prof. Nguyen Huu Thanh the Vice Chair of the IEEE Vietnam Section and Prof. Luong Chi Mai, the representative from the Vietnam Association of Informatics. Prof. Gary Yen gave a short introduction to our members' information of the IEEE and CIS; he also gave a talk on evolutionary multi-objective optimization and visited the Le Quy Don Technical University.

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Since the establishment, the chapter has been effectively involved with the IEEE CIS community. Our members come from many universities and research institutes in Vietnam. Our research focuses on Evolutionary Computation, Fuzzy Logics and Neural Networks and with applications to the areas of scheduling, robotics, text mining and network security. With the support of IEEE, the chapter has established its website at http://sites.ieee.org/vietnam-cis/ connecting us with other parts of the IEEE CIS family and works actively as a part of the IEEE Vietnam Section.

II. Activities in 2012

In 2012, we organized many research activities including organizing seminars, conferences and exchanging collaboration. We maintain the links between members via joined seminars and co-supervision of Ph.D. students. Our members have exchanged collaborations with partners around the world; notably Prof. Nguyen Xuan Hoai spent time at The Seoul National University SNU and Prof. Tran Quang Anh was with the University of New South Wales, and Dr. Huynh Thanh Binh visited Aizu University to implement the international linkage research program.

In 2012, meetings took place twice: at Da Nang University of Technology during The fourth International Conference on Knowledge and Systems Engineering (KSE 2012) in August 2012 and at the Le Quy Don Technical University in Hanoi during The Ninth International Conference on Simulated Evolution And Learning (SEAL'2012), December 2012. Our members were involved with both conferences; Prof. Lam Thu Bui was the General Chair of SEAL2012 and Prof PHAM Bao Son was the PC chair of KSE2012. At our meetings, the members discussed on how to promote CI towards industrial applications while maintaining a strong stand in the Vietnam research community.

In particular, many members of our chapters took part in organizing SEAL2012. It is the ninth biennial conference in the highly successful series that aims to explore both aspects of evolution and learning, and their roles and interactions in adaptive systems. Cross-fertilization between evolutionary learning and other machine learning approaches, such as neural network learning, reinforcement learning, decision tree learning, fuzzy system learning, etc., was the focus of the conference. At SEAL2012 many members' papers were presented including "Where Should We Stop? An Investigation on

Prof. Gary Yen with several members of the chapter.

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Early Stopping for GP Learning," "DEAL: A Direction-Guided Evolutionary Algorithm" or "Learning Rule for TSK Fuzzy Logic Systems Using Interval Type-2 Fuzzy Subtractive Clustering." We joined discussions with other IEEE CIS members coming from many parts of the world including keynote speakers: Prof. Hisao Ishibuchi, Kay Chen Tan and Yew Soon Ong, and Hussein Abbass.

Prof. Hussein Abbass's talk on "Computational Red Teaming: Can Evolution and Learning Augment Human Behavior?" focused on computational red teaming (CRT), a field that attempts to create a form of artificial intelligence (AI) where intelligence is measured as the ability of a computer environment to challenge humans. Prof. Kay Chen Tan's talk on "Advances in Evolutionary Multi-objective Optimization" showcased the incorporation of probabilistic graphical approaches in evolutionary mechanism that may enhance the iterative search process when interrelationships of the archived data have been learned, modeled, and used in the reproduction for multi-objective optimization. Prof. Hisao Ishibuchi's talk on "Fuzzy Genetics-Based Machine Learning" discussed the use of genetic-based machine learning for single and multi-objective fuzzy rule based classifier design. Prof. Yew Soon Ong's talk on "Towards a Unified Evolutionary and Memetic Search Model" presented a balance between generality (exploration through stochastic variation) and problem specificity (exploitation through lifetime learning). Prof. Kok Lay Teo's talk on "Optimal Discrete-Valued Control Computation: An Exact Penalty Function Approach" considered an optimal control problem in which the control takes values from a discrete set.

III. Future Plans

The chapter continues to maintain its scientific activities in 2013 in collaborations with the IEEE Vietnam Section and the IEEE Computational Intelligence Society. We plan to establish the distinguished lectures with support from IEEE CIS Distinguished lecturers' series. This will help to get more interests in CI from researchers, faculties and students throughout Vietnam. We also continue to promote CI among universities and institutes via scientific seminars of the members.

We will organize the first Vietnam workshop on Computational Intelligence in conjunction with The Fifth International Conference on System and Knowledge Engineering being hosted at the Hanoi University of Education. This workshop will open a forum for our members and people who are interested in CI research.