

IX Latin American Summer School on Computational Intelligence, Temuco, Chile.

November 25 and 26, 2013.

Chair: Millaray Curilem, Universidad de la Frontera, Chile.

Co-chair: Doris Sáez, Universidad de Chile, Chile.

December 5, 2013

The Chilean Chapter of the IEEE Computational Intelligence Society organized the IXth Latin American Summer School EVIC2013. Summer Schools on Computational Intelligence have been organized at the Universidad de Chile since 2003 and have demonstrated to be an important opportunity of exchange and update for undergraduate and graduate students from electrical engineering, computer science, mathematics, and related areas. This year, in order to promote the participation of students in the southern regions of Chile, EVIC 2013 took place in Temuco, at the Universidad de La Frontera (700 kms south of Santiago). EVIC2013 continued the tradition and offered an attractive program for its target audience.

Computational Intelligence meets a set of biologically inspired techniques addressed to complex engineering problems, such as Intelligent Control, Robotics, Optimization, Pattern Recognition, Prediction and others. The great advantage of these techniques is not only that they have demonstrated excellent results but mostly because of their flexibility to adapt to a wide variety of problems, from medicine to astronomy, through almost all knowledge areas. For this reason it is important that our students know their progress and applications in order to encourage their study. The aim of the EVIC2013 Summer School was then to promote Computational Intelligence and to disseminate the latest results of research and development of this interesting area, especially among graduate students and academics from Chile and other Latin American countries.

PROGRAM

The program was structured as follows:

1. Plenary Sessions

The plenary talks of EVIC 2013 were:

- P1: Evolutionary Global Optimisation and Constraint Handling. Prof. Xin Yao, Birmingham University, UK..
- P2: Evolving Granular Computation. Prof. Fernando Gomide, Universidad Estadual de Campinas, Brazil.
- P3: Digital Image Analysis: Applications in Biometrics and Mining. Prof. Claudio Perez, Universidad de Chile.

2. Tutorial Sessions

National experts presented tutorials on topics related to their expertise areas.

- **T1: An Introduction to Prognosis, Uncertainty Representation, and Risk Measures.** Prof. Marcos Orchard, Dpto. Ing. Eléctrica. Universidad de Chile.
- T2: The potential of Computational Intelligence for Data Mining. Prof. Richard Weber, Dpto. Ingeniería Industrial. Universidad de Chile.
- **T3: Modeling Non-Linear Dynamic Systems using Computational Intelligence.** Prof. Gonzalo Acuña, Dpto. Ing. Informática. Universidad de Santiago de Chile.
- **T4: Dynamics of Neural Networks.** Prof. Daniel Sbarbaro, Depto. Ing. Eléctrica Universidad de Concepción. Chile.
- T5: Multi-Agent-Based Model Predictive Control for Large-Scales Systems. Dr. Felipe Valencia. Depto. de Ing. Eléctrica. Universidad de Chile.

3. Poster Competition

The aim of this Completion is that students can present their applications using Computational Intelligence tools, from undergraduate and graduate works. Authors exposed their work to a jury (Fernando Gomide, Richard Weber, Claudio Perez and Richard Weber) who evaluated them.

Poster competition award:

Award	Authors	Title	Institution	Country
1er lugar	Enrique Germany	Algorithm to detect and decode a continuous estimate of the position (flexion - extension) of the fingers, using surface	Universidad de Concepción	Chile

		electromyography in the forearm.		
2do lugar	Leonardo Leottau , Carlos Celemin	A Fuzzy Control for Dribbling the Ball with Biped Robots	Universidad de Chile	Chile
3er Lugar	Francisco Jaramillo, Aramis Pérez, Marcos Ortiz, Luis Marín	Modelos de predicción para las fuentes de energía eólica, solar y de la demanda de consumo para la micro-red de Huatacondo	Universidad de Chile	Chile
Mención Honrosa	Arnoldo Valenzuela	Detecting P And S Seismic Signals Using Neural	Universidad de Santiago de Chile	Chile

Student participation in the posters competition: 23 posters.

Institution	Country	Number
Universidad Distrital “Francisco José de Caldas”	Colombia	3
Universidad Federal de Minas Gerais	Brasil	1
Universidad de la Frontera.	Chile	5
Universidad de Chile	Chile	6
Universidad de Concepción	Chile	2
Pontificia Universidad Católica de Valparaíso	Chile	4
Universidad de Valparaíso	Chile	1
Universidad de Santiago de Chile	Chile	1
TOTAL		23

PARTICIPANTS:

Institution	N. of participants
INRIA-FRANCE	1
U. Autónoma de Nuevo León. Mexico	1
Universidad Distrital “Francisco José de Caldas”. Colombia.	3
Universidade Federal de Minas Gerais. Brazil	1
Minera Esperanza	3
Pontificia Universidad Católica de Valparaíso	5
Universidad de Concepción	2
Universidad de Talca	3
Universidad de Tarapacá	1

Universidad de Valparaíso	5
Universidad de Santiago de Chile	1
Universidad de Chile	23
Universidad de la Frontera.	35
Total	84

We are satisfied of the organization of the event and the level of participation of students. We would like to thank the IEEE CIS, the Universidad de Chile and the Universidad de La Frontera for supporting the event. We also would like to thank all the professors and student whose participation enhanced this version of EVIC.