

EVIC 2005

Second Latin-American Summer School on Computational Intelligence

December 14-16, 2005, Universidad de Chile, Santiago, Chile

<http://www.die.uchile.cl/ieee-cis/evic2005/sp/index.htm>

(Release August, 2005)

GENERAL INFORMATION

The Summer School will be held at the Universidad de Chile, Santiago, Chile, jointly organized by the Chilean Chapter of the IEEE Computational Intelligence Society (former IEEE Neural Networks Society) and the Department of Electrical Engineering, Universidad de Chile.

SPONSORS

The Summer School is co-sponsored by the IEEE Computational Intelligence Society, the IEEE Chile Section and Asociación de Industria Electrónica de Chile.

ORGANIZATION COMMITTEE

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Program Chair: Dr. Javier Ruiz del Solar (Universidad de Chile)

Program Co-Chair: Dr. Gonzalo Acuña (Universidad de Santiago, Chile)

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TARGET AUDIENCE

Senior undergraduate and graduate students, researchers and professionals from IEEE R9 (Latin America), interested in learning and applying Neural Networks, Fuzzy Logic, Evolutionary Computation and other Computational Intelligence techniques.

COURSE CONTENTS

The Summer School is dedicated to explain the main models and algorithms used in Computational Intelligence (Neural Networks, Fuzzy Logic and Evolutionary Computation) and their application to signal processing, pattern recognition, control systems, robotics, biomedical engineering, data mining, etc.

Courses will have a duration of 4 hours. Some classes will include practical sessions with appropriate software tools. Spanish-speaking lecturers will give their lectures in Spanish. Otherwise the courses will be in English.

LECTURERS

Plenary Speakers

(IEEE Distinguished Lectures)

Dr. Jim Bezdek, The University of West Florida

Dr. Witold Pedrycz, University of Alberta

Dr. Paul Werbos, National Science Foundation – NSF, USA

Dr. Jacek Zurada, University of Louisville, President IEEE Computational Intelligence Society

Tutorial Speakers

Dr. Aldo Cipriano, DIE, Pontificia Universidad Católica de Chile

Dipl.-Eng. Sven Crone, Lancaster University Management School, UK

Dr. Pablo Estévez, DIE, Universidad de Chile

Dr. Claudio Held, DIE, Universidad de Chile

Dipl.-Phys. Mario Köppen, Department of Pattern Recognition, Fraunhofer IPK-Berlin, Germany

Dr. Javier Ruiz del Solar, DIE, Universidad de Chile

Dr. Mika Vainio, Automation Technology Laboratory, Helsinki University of Technology

Dr. Raoul Velazco, TIMA Lab, Grenoble, France

Dr. Richard Weber, DII, Universidad de Chile

Dr. Kaori Yoshida, Department of Artificial Intelligence, Kyushu Institute of Technology, Japan

Dr. Pablo Zegers, Universidad de Los Andes, Chile

M.Sc. Sami Ylönen, Automation Technology Laboratory, Helsinki University of Technology

Plenary Talks:

P1: Neural Networks and Adaptive Dynamic Programming (ADP): The New Path to Building and Understanding Brain-Style Intelligence, Dr. Paul Werbos

P2: Introduction to Clustering and Classification, Dr. Jim Bezdek

P3: The IEEE Computational Intelligence Society, Dr. Jacek Zurada

P4: Clustering in three types of very large (unloadable) data sets: images, object data and relational data, Dr. Jim Bezdek

P5: Knowledge-based fuzzy clustering, Dr. Witold Pedrycz

P6: Energy Dependence and CO₂: Nearest-Term Opportunities for a Dramatic Reduction, Dr. Paul Werbos

P7: Foundations and Applications of Granular Computing, Dr. Witold Pedrycz

Tutorials:

T1: Aspectos Teóricos y Prácticos de Lógica Difusa, Dr. Claudio Held

T2: Auto-Localización de Robots usando Métodos de Estimación de Parámetros, Dr. Javier Ruiz-del-Solar

T3: Arquitecturas de Redes Neuronales Basadas en el Perceptrón Multicapa. Dr. Pablo Zegers

T4: Introducción a la Inteligencia de Negocios con Técnicas de la Inteligencia Computacional, Dr. Richard Weber

T5: (Evolutionary) Multi-Objective Optimization, Dipl.-Phys Mario Köppen

T6: Kansei Information Processing, Dr. Kaori Yoshida

T7: Modern Field & Service Robotics - The Finnish Approach, Dr. Mika Vainio & M.Sc. Sami Ylönen

T8: Inteligencia Computacional en Estimación, Predicción y Control Tolerante a Fallas de Procesos Industriales, Dr. Aldo Cipriano

T9: Redes Neuronales Auto-Organizativas y Visualización de Datos, Dr. Pablo Estévez

T10: Predicting Error Rates in Processor-based Architectures: Methods & Tools, Dr. Raúl Velazco

T11: Forecasting with Artificial Neural Networks, Dipl.-Eng. Sven Crone

PRELIMINARY PROGRAM

Wednesday 14, December

- 9:00-9:30 Opening Ceremony
9:30-11:00 P1 “Neural Networks and Adaptive Dynamic Programming (ADP): The New Path to Building and Understanding Brain-Style Intelligence”, Dr. Paul Werbos
11:00-11:30 Coffee Break
11:30-13:00 P2 “Introduction to Clustering and Classification”, Dr. Jim Bezdek
13:00-14:30 Lunch
14:30-16:00 T1-A “Aspectos Teóricos y Prácticos de Lógica Difusa”, Dr. Claudio Held
T2-A “Auto-Localización de Robots usando Métodos de Estimación de Parámetros”, Dr. Javier Ruiz-del-Solar
T3-A “Arquitecturas de Redes Neuronales Basadas en el Perceptrón Multicapa”, Dr. Pablo Zegers
16:30-18:00 T1-B “Aspectos Teóricos y Prácticos de Lógica Difusa”, Dr. Claudio Held
T2-B “Auto-Localización de Robots usando Métodos de Estimación de Parámetros”, Dr. Javier Ruiz-del-Solar
T3-B “Arquitecturas de Redes Neuronales Basadas en el Perceptrón Multicapa”, Dr. Pablo Zegers

Note: The tutorials will be given in parallel tracks.

Thursday 15, December

- 9:00-10:00 P3 “The IEEE Computational Intelligence Society”, Dr. Jacek Zurada
10:00-11:20 P4 “Clustering in three types of very large (unloadable) data sets: images, object data and relational data”, Dr. Jim Bezdek
11:20-11:40 Coffee Break
11:40-13:00 P5 “Knowledge-based fuzzy clustering,”, Dr. Witold Pedrycz
13:00-14:30 Lunch
14:30-16:00 T4-A Introducción a la Inteligencia de Negocios con Técnicas de la Inteligencia Computacional, Dr. Richard Weber
T5-A “(Evolutionary) Multi-Objective Optimization”, Dipl.-Phys Mario Köppen
T6-A “Kansei Information Processing”, Dr. Kaori Yoshida
T7-A “Modern Field & Service Robotics - The Finnish Approach”, Dr. Mika Vainio & M.Sc. Sami Ylönen
16:30-18:00 T4-B Introducción a la Inteligencia de Negocios con Técnicas de la Inteligencia Computacional, Dr. Richard Weber
T5-B “(Evolutionary) Multi-Objective Optimization”, Dipl.-Phys Mario Köppen
T6-B “Kansei Information Processing”, Dr. Kaori Yoshida
T7-B “Modern Field & Service Robotics - The Finnish Approach”, Dr. Mika Vainio & M.Sc. Sami Ylönen
14:00-18:00 Poster Competition
18:00-19:30 Cocktail

Friday 16, December

- 9:00-10:30 P 6 “Energy Dependence and CO2: Nearest-Term Opportunities for a Dramatic Reduction”, Dr. Paul Werbos
10:30-11:00 Coffee Break
11:00-12:30 P7 “Foundations and Applications of Granular Computing”, Dr. Witold Pedrycz

- 12:30-14:00 Lunch
- 14:00-15:30 T8-A “Inteligencia Computacional en Estimación, Predicción y Control Tolerante a Fallas de Procesos Industriales”, Dr. Aldo Cipriano
 T9-A “Redes Neuronales Auto-Organizativas y Visualización de Datos”, Dr. Pablo Estévez
 T10-A “Predicting Error Rates in Processor-based Architectures: Methods & Tools”, Dr. Raúl Velazco
 T11-A “Forecasting with Artificial Neural Networks”, Dipl.-Eng. Sven Crone
- 16:00-17:30 T8-B “Inteligencia Computacional en Estimación, Predicción y Control Tolerante a Fallas de Procesos Industriales”, Dr. Aldo Cipriano
 T9-B “Redes Neuronales Auto-Organizativas y Visualización de Datos”, Dr. Pablo Estévez
 T10-B “Predicting Error Rates in Processor-based Architectures: Methods & Tools”, Dr. Raúl Velazco
 T11-B “Forecasting with Artificial Neural Networks”, Dipl.-Eng. Sven Crone
- 17:45-18:30 Closing Ceremony

STUDENT POSTER COMPETITION

A poster competition will be held during the summer school. Applicants to the competition must be graduate or senior undergraduate students who present their own research/thesis work on Computational Intelligence (for a complete description see the topics mentioned in the TUTORIALS section). Posters to be presented will be selected based on an extended abstract, written in English. The student must be the first author and must present the poster orally to the jury. The First Prize will be a certificate and US\$200. As Second and Third Prizes the respective winners will also receive a certificate.

Poster Guidelines

The following information should aid you in planning for your Poster Presentation during the EVIC 2005.

1. All illustrations and lettering should be prepared beforehand. The poster display is not to be solely the extended abstract pinned to the poster board.
2. The title of the presentation in full and the names of all authors should appear at the top of the display. Lettering for this information should be no less than 48 points for the title and slightly smaller for the authors' names. The subheading should not be less than 20 points.
3. Suggested size of your poster is A0, portrait format: 840 mm/33” wide by 1188/47” high, the maximum size of the board is 950 mm/37” wide by 1200/47” high.

Note: A color poster size A0 (84cm x 118cm) in bond paper costs CHILE \$16758 + IVA at Maxhuber (Phone: 396 3000, Santiago; web: www.maxhuber.cl). A CD with the poster in Freehand or equivalent should be provided.

Deadline for Extended Abstracts (Poster Competition): October 15, 2005

Abstracts should be written in English, limited to 3 pages (US letter size). Abstracts must include the following sections: introduction, methods, results, discussion and conclusion.

Affiliation should include the name of the student participating in the competition, and the name of the co-authors. Submit a PDF file to pzegers@uandes.cl

Decision Notification: November 4, 2005

Posters will be selected based on the quality of the extended abstract. The decision notification will be sent by electronic mail.

Poster Competition: December 15, 2005

Posters should be posted from 14:00 to 20:00 pm on Tuesday 15, December. A committee of 3 experts will evaluate the posters and assign the first, second and third places. The prizes will be delivered during the cocktail party on Tuesday 15.

STUDENT TRAVEL GRANTS

The IEEE Computational Intelligence Society offers 4 travel grants of US\$500 each to help IEEE student members not residing in Chile to attend the Summer School. The money can be used for travel and local expenses only. The requirements to apply for a travel grant are:

- Registration as IEEE Student Member belonging to Region 9, Latin-America and as a member of the IEEE Computational Intelligence Society (a student could apply at the same time for IEEE and CIS membership, and to the poster competition).
- Certificate as graduate student at Master or Doctor Course, or senior undergraduate doing thesis work.
- Letter of recommendation from the student's advisor or equivalent
- Curriculum Vitae including publications (limited to 3-4 pages)
- Abstract of three pages about your own research or thesis work in English (same as for the poster competition).
- Optional: Participation in the student poster competition will be taken into account positively.

Note 1: The IEEE CIS is working on a Web-based grant application system. The students applying for a grant from IEEE CIS must use this system. The application system will be open from September 2005.

Note 2: The IEEE CIS will emit a US\$500 check and send it to the selected students 1 month after the Summer School. The student must actually attend the Summer School in order to receive the check.

Note 3: In some cases the travel grant amount could not be sufficient to cover the total travel expenses. After being selected as a travel grant recipient, we recommend the students to apply for local help of their own university or IEEE section.

Deadline for Application to Travel Grant: October 15, 2005

Decision Notification: November 4, 2005

Note: The deadlines cannot be extended because the final decision about the travel grants will be taken in the U.S. by the IEEE CIS.

REGISTRATION

Lunch is not included.

LIMITED REGISTRATION (REGISTRATION DEADLINE: November 30th, 2005)

REGISTRATION FEES IN CHILEAN PESOS* (Until November 30, 2005)		
	Methods of Payment	
	Deposit en Bank Account	Credit Card**
Professionals	\$80.000	\$84.000
IEEE/AIE Members (up to date)	\$40.000	\$42.000
Students***	\$25.000	\$26.250
IEEE Students*** (up to date)	\$15.000	\$15.750

*As a reference, the exchange rate was of 580 Chilean pesos per US-dollar in May 2005.

** Credit card payments have a 5% charge with respect to deposit in bank account

*** Student must include a copy of their student ID, and a letter or email of their advisor at the University

Registration: Fill the form at the web page
<http://www.die.uchile.cl/ieee-cis/evic2005/en/index.htm>

For Chilean residents: Deposit at the bank account N° 35412-00 from “Banco de Chile”, nominative to “Fundación para la Transferencia Tecnológica”, RUT 71.645.700-2. Send the receipt by fax to 56-2-6720162 o by email to pestevez@cec.uchile.cl.

For people not living in Chile: Credit card payment is possible. Please check the web page
<http://www.die.uchile.cl/ieee-cis/evic2005/sp/index.htm>.