

Due to new partnerships with IBRO (International Brain Research Organization), SPRINGER, IEEE-RITA, CCIS/ISI Proceedings and numerous requests, the submission deadline was extended to July 31, 2017!

Apologies for cross-posting and/or duplicate posts.

---

CALL FOR PAPERS

LATIN AMERICAN WORKSHOP ON COMPUTATIONAL NEUROSCIENCE 2017

Paper Submission Deadline: **July 31, 2017 (extended)**

November 22-24, 2017

Federal University of Rio Grande do Sul (UFRGS), Porto Alegre,  
Brazil.

<http://www.inf.ufrgs.br/lawcn/>

Contact: [lawcn2017@easychair.org](mailto:lawcn2017@easychair.org)

---

**Computational neuroscience is the study of brain function regarding the information processing properties of the structures that make up the nervous system.** It is an interdisciplinary science that links the diverse fields of neuroscience, as **cognitive science, medicine, psychology, electrical engineering, biomedical engineering, mechanical engineering, computer science, mathematics, physics and even philosophy.** The Federal University of Rio Grande do Sul (UFRGS), located in Porto Alegre, in the south of Brazil, has promoted a more restricted version of this Workshop in November 2012. Since then, participants and investigators in the interdisciplinary fields related to Computational Neuroscience are claiming to resume the realization of this event. In this sense, with a broader scope aiming to encourage young researchers and graduate master and doctorate students in all Latin America, this edition will have three main topics: a) **neuroscience**, b) **neuroengineering** and c) **artificial intelligence and related techniques.**

The Workshop will consist mainly of the following activities:

- a) presentation of up to 8 key renowned international and national researchers;
- b) presentation of up to 50 oral presentations;
- c) presentation of poster presentations;
- d) presentation of practical applications in neuroscience, both from University and from companies active in the field; and
- e) **practical demonstration of the A2200 Enigma machine**, which belongs to the Informatics Institute, as a special tribute to the **105th Birthday Anniversary of Alan Turing**, considered one of the founding fathers of Computer Science.

All participants who investigate and contribute to the understanding of the properties of the brain, such as Medicine, Physics, Computer Science, Engineering, Psychology,

Philosophy and others are welcomed. Issues related to the support of Communication and Information Technology and High-Performance Computing in Neuroscience will receive particular attention. UFRGS is happy to welcome LATIN AMERICAN WORKSHOP ON COMPUTATIONAL NEUROSCIENCE (LAWCN) in Porto Alegre, Brazil.

## **GENERAL INFORMATION**

### **IMPORTANT DATES**

- \* ~~June 30, 2017~~ **July 31, 2017: Submission deadline for papers**
- \* September 14, 2017: Notification of acceptance
- \* October 05, 2017: Camera-ready papers and copyrights waivers
- \* November 13, 2017: Posters Image Files due, which will be digitally presented
- \* **November 22-24, 2017: Workshop, UFRGS - Porto Alegre, Brazil.**

### **SCOPE**

LAWCN 2017 covers all aspects of Computational Neuroscience. Although the interdisciplinary nature of the Conference and the stimulus to work at intersections and the frontiers of different disciplines, for the sake of clarifying the scope of the Workshop, topics will be presented on the three main axes. The interest topics include (but are not limited to):

#### **a) Neuroscience:**

- \* Sensory processing
- \* Network dynamics
- \* Reinforcement learning
- \* Motivation and decision making
- \* Statistical approaches in neuroscience
- \* Systems Neuroscience
- \* Learning and memory Attention
- \* Arousal of Sensory-Motor Integration Learning in networks
- \* Ethical and philosophical issues related to Neuroscience
- \* Educational issues

#### **b) Neuroengineering:**

- \* Large-scale recordings
- \* Neural signal processing
- \* Neuromodulation
- \* Neuroprosthetics
- \* Robotics
- \* Biomedical devices development
- \* Humanoid robots
- \* Robots for Elderly People
- \* Sensing in Robotics
- \* Fusion of Sensors
- \* Hardware implementations in Neuroscience
- \* Software implementations in Neuroscience

- \* Brain-Computer Interfaces: design and applications
- \* Ethical and philosophical issues related to Neuro-engineering
- \* Educational issues

c) **Artificial Intelligence and related techniques:**

- \* Artificial Intelligence Techniques in Neuroscience
- \* Bioinformatics
- \* Clustering and Applications
- \* Computer Vision, Cognitive and Humanoid Vision
- \* Databases, Data Mining, Intelligent Data Analysis, Knowledge-based Systems and Linguistic Tools
- \* Data Visualization and Applications
- \* Deep Learning
- \* Statistical Pattern Recognition/Document Processing and Recognition
- \* Fuzzy and Hybrid Techniques
- \* Geometric Algebra Application in Perception-Action
- \* High-Performance Computing for Pattern Recognition
- \* Image Coding, Processing, and Analysis
- \* Kernel Machines
- \* Mathematical Theory of Computational Neuroscience
- \* Neural Networks
- \* Parallel and Distributed Applications for Computational Neuroscience
- \* Robotics and Humanoids
- \* Shape and Texture Analysis
- \* Signal Processing and Analysis
- \* Spatio-temporal Analysis
- \* Ethical and philosophical issues related to Artificial Intelligence
- \* Educational issues

**KEYNOTE SPEAKERS**

LAWCN Organizing Committee is proud to announce the confirmation of the following invited talks:

**Dr. Francisco Sotres Bayón**, Professor of Neurosciences at the National Autonomous University of México (UNAM), México

Title of the talk : **Understanding the Brain mechanisms of learned and innate motivational conflicts**

**Dr. Laurence Devillers**, Professor of Computer Science at Paris-Sorbonne University, Paris, France

Title of the talk : **Affective and Social Robotics : engagement, evaluation and ethics**

**Dr. Sen Cheng**, Professor of Computational Neuroscience at the Ruhr University Bochum (RUB), Bochum, Germany

Title of the talk : **Intrinsic Sequences in the hippocampus for spatial navigation and memory storage**

**Dr. Vinicius Rosa Cota**, Professor of Electrical Engineering at the Federal University of São João del-Rei (UFSJ), São João del-Rei, Brazil

Title of the talk : **Toward a neural prosthesis to the epileptic brain by tackling neural hyper synchronism**

The confirmation of other invited speakers will be done soon.

#### **REGISTRATION FEES**

- Until ~~30/06/2017~~ 31/07/2017  
Undergraduate Student: R\$ 100,00  
Graduate Student: R\$ 150,00  
Professionals: R\$ 200,00
- Until 13/10/2017  
Undergraduate Student: R\$ 125,00  
Graduate Student: R\$ 175,00  
Professionals: R\$ 225,00
- From 14/10/2017  
Undergraduate Student: R\$ 150,00  
Graduate Student: R\$ 200,00  
Professionals: R\$ 250,00

**Registrations can be done at:**

<http://www2.fundacaomedica.hcpa.ufrgs.br/siafnet/hinscricoesemcursosv3.aspx?1598,I+LAW+CN+-+LATIN+AMERICAN+WORKSHOP+ON+COM>

#### **PAPER SUBMISSION AND PUBLICATIONS**

- Papers should be submitted exclusively through EasyChair website:  
<https://easychair.org/conferences/?conf=lawcn2017>
- Papers will be evaluated based on their originality, quality, and significance of the theoretical and practical contribution to Computational Neuroscience;
- Only papers presented at the conference will be included in the proceedings;
- All papers (Short and Full) and Digital Posters must be in PDF format and include abstract, figures, tables and references in the minimum/maximum amount of pages (according to the category desired);
- Papers can be submitted in four categories (see image bellow):
  - Short paper not related directly to Computer Science:
    - Length: between 3 and 8 pages
    - Languages: English, Spanish and Portuguese
  - Short paper related to Computer Science:

- Length: between 6 and 8 pages
    - Language: English
  - Full paper not related directly to Computer Science:
    - Length: between 10 and 15 pages
    - Languages: English, Spanish and Portuguese
  - Full paper related to Computer Science:
    - Length: between 10 and 15 pages
    - Language: English
- Papers that are not related directly to Computer Science will be published in the Latin-American Workshop on Computational Neuroscience Proceedings and can be submitted in English, Portuguese or Spanish. Papers that are related to Computer Science will be published in **Springer-Verlag Communications in Computer and Information Science (CCIS) Proceedings** (ISSN 1865-0929), and the best papers will be indicated to be published in Education, Technology and Culture (ISSN 1808-0588) or IEEE-RITA (ISSN 1932-8540).
- Papers (Short and Full) can be selected by the Program Committee for Oral or Poster presentations, regardless its length and category.
- At least one author of each accepted paper for oral or poster presentation must register at the conference. If more than one paper per author is accepted, there is an extra registration fee;
- Since LAWCN has goals to foster and encourage investigation careers of young and talented researchers, the Program Committee will select the best papers to be published in indexed journals. Contacts with editors have already been made and will continue until the realization of the Workshop to stimulate Science divulgation.
- One of the authors must sign and attach a disclosure form if the paper is accepted;
- More details about the papers submission process can be found on the Congress web page.

# LAWCN 2017 Submissions

## Short Paper 1

(3-8 pages not related directly to Computer Science)

Will be published in [LAWCN 2017 Proceedings](#)

ENGLISH  
SPANISH  
PORTUGUESE

## Short Paper 2

(6-8 pages related to Computer Science)

Will be published in [Springer CCIS Proceedings](#)

ENGLISH ONLY

## Full Paper 1

(10-15 pages not related directly to Computer Science)

Will be published in [LAWCN 2017 Proceedings](#)

ENGLISH  
SPANISH  
PORTUGUESE

## Full Paper 2

(10-15 pages related to Computer Science)

Will be published in [Springer CCIS Proceedings](#)

ENGLISH ONLY

## LAWCN AWARDS

The Program Committee will select the **three best oral presentations (one for each main topic of the event)** during the workshop. One of the authors of these papers will be entitled to a prize that will consist of amounts **up to USD 300 for registration in scientific events in areas related to the Workshop and which occur in 2018**, as well as free registration for the next edition of LAWCN. These awards will depend on the amount obtained by the registrations.

## ORGANIZERS

### General Chair:

**Prof. Dr. Dante Augusto Couto Barone**, Informatics Institute, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

### Deputy General Chair:

**Prof. Dr. Marino Bianchin**, Medicine Faculty, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

**Organizing Committee:**

**Christian Puhlmann Brackmann** IFFAR, Santa Maria, RS, Brazil  
**Dante Augusto Couto Barone** UFRGS, Porto Alegre, RS, Brazil  
**Eduardo Oliveira Teles** IFBA, Camaçari, BA, Brazil  
**Heron Pereira** UFRGS, Porto Alegre, RS, Brazil  
**Jaime Andres Riascos Salas** UFRGS, Porto Alegre, RS, Brazil  
**Marino Muxfeldt Bianchin** UFRGS, Porto Alegre, RS, Brazil  
**Paulo Rogério de Almeida Ribeiro** UFMA, São Luís, MA, Brazil  
**Pedro Schestatsky** UFRGS, Porto Alegre, RS, Brazil  
**Rodrigo Alejandro Sierra** UFRGS, Porto Alegre, RS, Brazil

**Program Committee:**

**Alexandre César Muniz de Oliveira**, Informatics Department, Federal University of Maranhão (UFMA), São Luís, Brazil

**Antônio Carlos Roque**, Physics and Mathematics Department, São Paulo University (USP), Ribeirão Preto, Brazil

**Areolino de Almeida Neto**, Informatics Department, Federal University of Maranhão (UFMA), São Luís, Brazil

**Christian Haag Kristensen**, Psychology Faculty, Pontifical Catholic University of Rio Grande do Sul (PUC-RS), Porto Alegre, Brazil

**Dante Augusto Couto Barone**, Informatics Institute, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

**Diana Adamatti**, Center of Computational Sciences, Federal University of Rio Grande (FURG), Rio Grande, Brazil

**Edson Prestes e Silva Junior**, Informatics Institute, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

**Eduardo López-Larraz**, Institute of Medical Psychology and Behavioural Neurobiology, University of Tübingen, Tübingen, Germany

**Eduardo Vicentini de Medeiros**, Experimental Philosophy and Cognitive Studies Laboratory, Vale do Rio dos Sinos University (UNISINOS), Porto Alegre, Brazil

**Fabício Lima Brasil**, Edmond and Lily Safra International Institute of Neurosciences, Santos Dumont Institute (ELS IINN), Natal, Rio Grande do Norte, Brazil

**Felipe Meneguzzi**, Informatics Faculty, Pontifical Catholic University of Rio Grande do Sul (PUC-RS), Porto Alegre, Brazil

**Francisco Sotres Bayón**, Celular Physiology Institute, National Autonomous University of México (UNAM), México

**Frederico Augusto Casarsa de Azevedo**, Max Planck Institute for Biological Cybernetics, Tübingen, Germany

**Gustavo Gauer**, Psychology Institute, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

**Hougelle Simplicio Gomes Pereira**, Edmond and Lily Safra International Institute of Neurosciences, Santos Dumont Institute (ELS IINN), Natal, Rio Grande do Norte, Brazil

**Jés de Jesus Fiais Cerqueira**, Electrical Engineer Department, Federal University of Bahia (UFBA), Salvador, Brazil

**Jim Tørresen**, Department of Informatics, University of Oslo (UiO), Oslo, Norway

**Juan Verdejo-Román**, Brain and Behavior Research Center, University of Granada (UGR), Granada, Spain

**Luciana Porcher Nedel**, Informatics Institute, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

**Luis Fernando Cardenas Parra**, Psychology Department, Los Andes University, Bogotá, Colombia

**Marco Rocha Curado**, University Medical Center Freiburg, Freiburg, Germany

**Marcos Yuzuru de Oliveira Camada**, Electrical Engineering Graduate Course, Federal University of Bahia (UFBA), Salvador, Brazil

**Marino Muxfeldt Bianchin**, Medicine Faculty, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

**Miguel Perez Garcia**, Mind, Brain and Behavior Research Center, University of Granada (UGR), Granada, Spain

**Olavo Amaral**, Biochemical Medicine Institute, Federal University of Rio de Janeiro (UFRJ), Rio de Janeiro, Brazil

**Patricio Donnelly Kehoe**, Scientific and Technological Center of Rosario, National University of Rosario (UNR), Rosario, Argentina

**Paulo Rogério de Almeida Ribeiro**, Computer Engineering Department, Federal University of Maranhão (UFMA), São Luís, Brazil

**Pedro Schestatsky**, Medicine Faculty, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

**Ricardo Matsumura Araujo**, Department of Technology, Federal University of Pelotas, Pelotas, Brazil



**Reinhold Scherer**, Institute of Neural Engineering, Graz University of Technology, Graz, Austria

**Renan Cipriano Moioli**, Edmond and Lily Safra International Institute of Neurosciences, Santos Dumont Institute (ELS IINN), Natal, Rio Grande do Norte, Brazil

**Risto Ilmoniemi**, Department of Neuroscience and Biomedical Engineering, Aalto University, Helsinki, Finland

**Rodrigo Alejandro Sierra**, Biosciences Institute, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil

**Rukiye Uzun**, Department of Electronics and Electrical Engineering, Bulent Ecevit University (BEU), Zonguldak, Turkey

**Sen Cheng**, Computational Neuroscience Institute, Ruhr University Bochum (RUB), Bochum, Germany

**Silvio Cesar Cazella**, Department of Exact and Applied Social Sciences, Federal University of Health Sciences of Porto Alegre (UFCSA), Porto Alegre, RS, Brazil

**Victor Christian Paredes Cauna**, Texas A&M University, Bryan/College Station, USA

**Vinicius Rosa Cota**, Electrical Engineering Department, Federal University of São João del-Rei (UFSJ), São João del-Rei, Brazil