Book Review

Multi-Agent-Based Simulations Applied to Biological and Environmental Systems

Diana Francisca Adamatti

Advances in Computational Intelligence and Robotics Book Series
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Section I - Theoretical Models and Tools

Section II- Applications in Biological and Environmental Systems

Simulations and (discipline-) applications are the two major influences and reasons for the extensive applications of systems across domains. Multi-agent simulations are one of the significant technologies evolved in the last few years. Simulations change over time and effective models can able to track such changes. Since multi-agents are complex involving heterogeneous environments, simulations can enable to sense such complexities. Multi-agents are considered to have influence across domains and sectors and one such major influence is on biological and environmental domains. Realizing this value Diana Adamatti has brought this companion to aid the researchers and other users to keep record of the agent based simulations.

Under the first section on Theoretical Models and Tools, the authors *Magessi* and *Antunes* with a chapter on Ignition of Algorithm Mind have outlined how neurons ignite the algorithm formation. They explained how agents represent neurons where neurons depend on decisive algorithms. The characterization of neurons would lead to understand the formation of algorithms pertaining to it.

Costa in the second chapter on Ecosystems as Agent Societies, Landscapes as Multi-Societal Agent Systems has give descriptive architectures and structure of ecosystem and treated it as multiagent systems. The interaction of the ecosystems of a landscape is enumerated with details by the author.

Portegys and his co-authors in the third chapter on Morphozonic, Cellular automata with nested neighborhoods as metamorphic representation of morphogenesis have presented basically a cellular automation model. They have given an excellent introduction to morphogenesis which is essential to understand the biological intelligent agents and how these agents can work for the understanding of biological simulations. The cellular automation contributes to morphozoics; how the cellular automation emerges and what are the development and how they form are the few ingredients in this chapter. The wonderful list of references is quite amazing. We can realize the pain of the authors to develop a very exhaustive reference list which direct the user in the future research directions as well as to gain understanding.

In the fourth chapter on 'A Scalable Multi-agent architecture for monitoring biodiversity scenarios' the authors *Rocha* and *Brandao* have addressed the scalability issues in environmental and biodiversity tracking. According to the authors the Internet of Things in bio-environmental science is crucial for which the scalability is a key challenge. To aid the solution the researchers can make use of the proposed algorithms, architecture and solutions.
In the next chapter on 'A Multi-agent-based environmental simulator', the computational tools to analyze the environmental scenarios of land change was advocated by *Ralha* and *Abreu.* The agent based simulator they have developed is named as MASE, which is really a conceptual model based on real environmental cases, a reality-based one.

In the sixth chapter, the authors Ballet and his co-authors have outlined in details with enough background, the intuitive agent-based software for modeling and simulating complex systems in biology. While introducing this software they have detailed a good background and provided real time processing environment.

Call for Contributions
Inform the Chair: with the Title of your Contribution
Submission URL:
https://www.iariasubmit.org/conferences/submit/newcontribution.php?event=SIGNAL+2017+Special
Please select Track Preference as **5GSIGWAVE**

Special track
5GSIGWAVE: Signal Processing for Decentralized, Cognitive and Self-organised 5G Wireless Access Networks

Chair and Coordinator
Dr. Ramiro Sámano Robles, CISTER Research Centre, ISEP - Instituto Superior de Engenharia do Porto – Porto, Portugal
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along with
SIGNAL 2017, May 21 - 25, 2017 - Barcelona, Spain
The Second International Conference on Advances in Signal, Image and Video Processing
- from Sensing to Applications –
http://www.iaria.org/conferences2017/SIGNAL17.html

The number of wireless connections is growing exponentially around the globe. It is expected that up to 50 billion devices will be connected to the net by 2050. Most of these connections will involve wireless technologies. However, with current wireless standards it will be impossible to cope with this increase in traffic demand and different quality of service requirements. In addition, the signalling load needed for resource allocation and device coordination in such massive deployment will become prohibitively large. 5G wireless access networks will need to combine several innovative aspects of decentralized and centralized allocation looking for maximizing performance and minimizing signalling load.

Spectrum resources need to be dynamically shared using advanced cognitive radios and self-organization that will enable the maximum exploitation of opportunities with minimized interference and maximum quality of service satisfaction. Centralized architectures with cloud computing, context-aware, and big data processing will enable large and dense network deployments with high interference rejection, embedded security, and energy savings. Signal processing will be of paramount importance in future 5G networks to make efficient use of resources, resolve conflicts, reduce signalling load, improve transfer of information, improve security, make efficient use of energy consumption, reject interference, and enable efficient detection of spectrum opportunities.

Contributing papers are suggested to cover one or more (but not limited to) of the following sub-topics:

- Multiple antenna processing
- Signal processing for contention resolution algorithms
- Orbital angular momentum processing
- Full duplex algorithms
- Device-to-device signal processing
- 3D beamforming
- Sparse signal processing
- Massive MIMO,
- Full-dimension MIMO
- Large scale cooperative processing
- Innovative modulation formats and encoding
- MAC-PHY cross-layer design for 5G access

• Error correction protocols
• mm-wave design, spectrum sharing
• Energy harvesting for 5G
• Coordinated distributed antenna processing,
• Interference alignment
• Cooperative relaying diversity
• Adaptive beamforming
• Space division multiplexing
• Multi-packet reception with interference cancellation
• Cognitive radio resource allocation
• Self-organized resource allocation
• Multi-hop ad-hoc processing
• Blind and semi blind algorithms for multiuser detection and contention resolution
• Decentralized contention resolution protocols for 5G futures wireless networks
• Signal processing for cloud radio access network
• Software defined networking processing
• Ultra-dense networks
• Full duplex algorithms
• Non-orthogonal multiple access
• Error correction and channel coding for 5G
• PHY-layer for low latency
• Embedded security
• Filter bank multi carrier
• Spectral-efficient FDM systems
• Generalized FDM
• Channel modelling issues
• Multi-objective optimization for signal processing in 5G
• Game theory for self-organized and cognitive radio 5G networks
• Low latency solutions for machine-type communications

Important Datelines

- Inform the Chair: As soon as you decided to contribute
- Submission: February 28
- Notification with comments for camera-ready: March 15
- Registration: April 2
- Camera ready: April 9

Contribution Types

- Regular papers [in the proceedings, digital library]
- Short papers (work in progress) [in the proceedings, digital library]

- Posters: two pages [in the proceedings, digital library]
- Posters: slide only [slide-deck posted on www.iaria.org]
- Presentations: slide only [slide-deck posted on www.iaria.org]
- Demos: two pages [posted on www.iaria.org]

Paper Format

- See: http://www.iaria.org/format.html
- Before submission, please check and comply with the editorial rules: http://www.iaria.org/editorialrules.html

Publications

- Extended versions of selected papers will be published in IARIA Journals: http://www.iariajournals.org
- Print proceedings will be available via Curran Associates, Inc.: http://www.proceedings.com/9769.html
- Articles will be archived in the free access ThinkMind Digital Library: http://www.thinkmind.org

Paper Submission

https://www.iariasubmit.org/conferences/submit/newcontribution.php?event=SIGNAL+2017+Special
Please select Track Preference as **5GSIGWAVE**

Registration

- Each accepted paper needs at least one full registration, before the camera-ready manuscript can be included in the proceedings.
- Registration fees are available at http://www.iaria.org/registration.html

Contact

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Logistics: steve@iaria.org

First International Workshop on "IoT and Antenna Design" (IoTAD)
(Co-located with the Sixth International Conference on Future Generation Communication Technologies
Irish Computer Soceity, Dublin
Ireland
August 21-23, 2017
(www.socio.org.uk/fgct)

Antennas have high impact in the radio frequency. Antennas are frequently deployed in major applications that include many such as mobile phones, satellite communications, garage-door openers and so on. Recently the antennas are able to connect less-obvious devices due to the Internet of Things. The connections emerge wireless, untethered to any cable. Thus antennas have profound applications both at macro and micro levels, visible as well as hidden, more obvious as well as less-obvious. The recent ultra-wideband (UWB) technology, printed slot antennas etc., have impact in the UWB communication systems. Antenna designs now go beyond normal way and able to connect many unconnected devices. Thus the proposed workshop can able to address the new applications and design views.

The workshop will discuss the themes not limited to-

- Bandwidth, Optimization
- Impedance
- Ultra wideband antennas
- Algorithm design and analysis
- Slot antennas
- Broadband antennas
- Microstrip antennas
- Ultra wideband antennas
- Ultra wideband technology
- Wireless LAN Feeds
- Dielectric resonator antennas
- Ultra wideband technology
- Bandwidth, Resonance
- Resonant frequency
- Loaded antennas
- Permittivity
- Dipole antennas
- Antenna radiation patterns

Important Dates

Submission of Papers	: May 25, 2017
Notification of Acceptance	: July 01, 2017
Camera Ready	: August 01, 2017
Registration	: August 01, 2017
Conference Dates	: August 21-23, 2017

The selected papers after extension and modification will be published in many peer reviewed and indexed journals.

Workshop Chairs

Ricardo Rodriguez Jorge
Engineering and Technology Institute
Av. del Charro no. 450 Nte Col. Partido Romero,
C.P. 32310
Mexico

Submissions at http://www.socio.org.uk/fgct/paper-submission/
Contact: fgct at socio.org.uk

Deep Learning Applications
(Co-located with the Seventh International Conference on Innovative Computing Technology (INTECH 2017)
Luton, UK
August 16-18, 2017
(www.dirf.org/intech)

Deep Learning (DL) is an important component of computational intelligence which has the core domain machine learning research in it. It provides more efficient algorithms to deal with large-scale data in neuroscience, computer vision, speech recognition, language processing, biomedical informatics, recommender systems, learning theory, robotics, games, and so on. DL is gaining applications in many domains due to the availability of large amount of data coupled with machine learning algorithms. As the DL applications are on increasing trend a workshop on it will enable to identify the emerging trends in the domain.

The proposed workshop will address the below listed but not limited themes.

• Neural network architectures

• DL Applications to the Natural Sciences

• Visual Perception using Deep Convolutional Neural Networks

• Deep Learning for Computer Vision

• Deep Sequence Modeling: Historical Perspective and Current Trends

• Automatic Terminology Extraction

• Deep Learning of Behaviors

• Probabilistic Graphical Models Algorithms

• Deep Learning for Natural Language Processing

• Deep Learning Applications at the Enterprise Scale

• Multi-modal Deep Learning

• Deep Learning Security

• Neural Networks

• From Statistical Decision Theory and Deep Neural Networks

• Machine Learning and Deep Neural Networks

• Cognitive Architectures for Object Recognition in Video

• Learning Representations for Vision, Speech and Text Processing Applications

• Deep Learning in the Brain

• Deep Learning for Sequences

• Interpretable Deep Learning Models for Healthcare Applications

• Deep Learning for Video Games

• Data Processing Methods, and Applications of Least Squares Support Vector Machines

• Deep Generative Models and Unsupervised Learning

• Natural Language Understanding

Submissions

Submissions should provide original and unpublished research results or ongoing research with simulations. The papers should be between 6 to 8 pages total in length in the IEEE format.

* All the accepted papers will appear in the proceedings published by IEEE and fully indexed by IEEE Xplore.

* Modified version of the selected papers will appear in the special issues of many peer reviewed and indexed journals.

Important Dates

Submission of papers	: June 01, 2017
Notification of Acceptance/Rejection	: July 01, 2017
Camera Ready	: August 01, 2017
Registration	: August 01, 2017
Conference	: August 16-18, 2017

Organizers

Ricardo Rodriguez Jorge, Engineering and Technology Institute, Mexico
Submissions at-http://www.dirf.org/intech/paper-submission/
Contact- intech@dirf.org

CALL FOR PAPERS

Sixth International Conference on Future Generation Communication Technologies
Irish Computer Soceity, Dublin
Ireland
August 21-23, 2017
(www.socio.org/fgct)

In the last decade, a number of newer communication technologies have been evolved, which have a significant impact on the technology, as a whole. The impact ranges from incremental applications to dramatical breakthrough in the society. Users rely heavily on broadcast technology, social media, mobile devices, video games and other innovations to enrich the learning and adoption process.

This conference is designed for teachers, administrators, practitioners, researchers and scientists in the development arenas. It aims to provide discussions and simulations in the communication technology at the broad level and broadcasting technology and related technologies at the micro level. Through a set of research papers, using innovative and interactive approach, participants can expect to share a set of research that will prepare them to apply new technologies to their work in teaching, research and educational development amid this rapidly evolving landscape.

Topics discussed in this platform are not limited to-

- Emerging cellular and new network architectures for 5G
- New antenna and RF technology for 5G wireless
- Modulation algorithms
- Circuits, software and systems for 5G
- Convergence of multi-modes, multi-bands, multi-standards and multi- applications in 5G systems
- Cognitive radio and collaborative transmissions in 5G
- Computing and processing platform for 5G
- Programming models and development tools to enable 5G systems
- Small cells and heterogeneous networks
- Metrics and Evaluation of 5G systems
- Standardization of 5G
- Deployment options such as small cells, eICIC, MIMO and CoMP
- LTE/WiFi interworking, carrier aggregation, dual connectivity
- C-RAN, D-RAN, mmWave, Massive MIMO and ultra-low latency
- Higher protocol layers
- Latency and traffic scheduling
- Broadcast technology
- Future Internet and networking architectures
- Future mobile communications
- Mobile Web Technology
- Mobile TV and multimedia phones
- Communication Security, Trust, Protocols and Applications
- Communication Interfaces
- Communication Modelling
- Satellite and space communications
- Communication software

• Future Generation Communication Networks
• Communication Network Security
• Communication Data Grids
• Collaborative Communication Technology
• Intelligence for future communication systems
• Forthcoming optical communication systems
• Communication Technology for Elearning, Egovernment, Ebusiness
• Games and games designing
• Social technology devises, tools and applications
• Crowdsourcing and Human Computation
• Human-computer communication
• Pervasive Computing
• Grid, crowd sourcing and cloud computing
• Hypermedia systems
• Software and technologies for E-communication
• Intelligent Systems for E-communication
• Future Cloud for Communication
• Future warehousing
• Future communication for healthcare and medical devices applications
• Future communication for Mechatronic applications

All presented papers in the conference will be published in the proceedings of the conference and submitted to the IEEE Xplore Digital Library.

The conference will have workshops on specific themes, industrial presentation, invited talks and collaborative discussion forums.

Important Dates

Submission of Papers : May 25, 2017
Notification of Acceptance:July 01, 2017
Camera Ready : August 01, 2017
Registration : August 01, 2017
Conference Dates : August 21-23, 2017

The selected papers after extension and modification will be published in many peer reviewed and indexed journals.

1. Journal of Computer and System Sciences/ (ISI/Scopus)
2. Journal of Digital Information Management (Scopus/EI)
3. International Journal of Computational Science and Engineering (Scopus and EI Indexed)
4. Decision Analytics
5. International Journal of Big Data Intelligence
6. International Journal of Applied Decision Sciences (Scopus/EI)
7. International Journal of Management and Decision Making (Scopus/EI)
8. International Journal of Strategic Decision Sciences
9. International Journal of Enterprise Information Systems (Scopus/EI)
10. Journal of Electrical Systems
11. Recent Advances in Electrical & Electronic Engineering

Seventh International Conference on Innovative Computing Technology (INTECH 2017)
Luton, UK
August 16-18, 2017
(www.dirf.org/intech)

The INTECH 2017 (seventh edition) will be held at Luton, UK during August 16-18, 2017 and it offers the opportunity for institutes, research centers, engineers, scientists and industrial companies to share their latest investigations, researches, developments and ideas in area of Innovative Computing Technology, which covers huge topics.

The INTECH intends to address various innovative computing techniques involving various applications. This forum will address a large number of themes and issues. The conference will feature original research and industrial papers on the theory, design and implementation of computing technologies, as well as demonstrations, tutorials, workshops and industrial presentations. This conference (INTECH 2017) will include presentations of contributed papers by invited keynote speakers.

Conference papers will include innovative computing paradigms in the following topics:

Network and Information Security Innovative Computing Systems and Applications in S & T domains such as –

• Algorithms Applied Information Systems

• Artificial Intelligence and Decision Support Systems

• Broadcasting Technology

• Cloud Computing

• Computational Intelligence

• Data and Network mining

• Data Stream Processing in Mobile/Sensor Networks

• Database Systems

• Digital Image/Video Processing

• E-Learning, e-Commerce, e-Business and e-Government

• Electronics Environmental modeling and precision agriculture

• Fault Classification and Pattern Recognition

• Green Computing

• Grid computing

• Human-Computer Interaction

• Intelligent Condition

• Monitoring Mobile network and systems

• Multimedia and Interactive Multimedia Payment Systems

• Peer-to-peer social networks

• Precision Farming Web Farming Signal Processing Soft Computing: Fuzzy and Neural Network Systems, optimization algorithms

Software Engineering Intelligent Farming: Web farming, Web irrigation Ubiquitous Computing User Interfaces,

• Visualization and Modeling

• Virtual Reality Visualization

• Web services

• WWW Applications and Technologies

• XML and other Extensible Languages

The INTECH proceedings will also be indexed by dblp. All the papers will be reviewed and the accepted papers in the conference will be submitted to IEEE Xplore for indexing and will be indexed in many global databases.In addition, all the accepted papers (for Journals) will be published in the following special issues journals after substantial revision and modification.

In addition, selected papers after complete modification and revision will be published in the following special issues of journals.

Journal of Digital Information Management (JDIM) (Scopus and EI Indexed)

International Journal of Enterprise Information Systems (Scopus and EI Indexed)

International Journal of Grid and High Performance Computing (IJGHPC) (Scopus and EI Indexed)

International Journal of Computational Science and Engineering (Scopus and EI Indexed)

International Journal of Big Data Intelligence

International Journal of Applied Decision Sciences (Scopus/EI)

International Journal of Management and Decision Making (Scopus/EI)

International Journal of Strategic Decision Sciences

International Journal of Enterprise Information Systems (Scopus/EI)

Recent Advances in Electrical & Electronic Engineering (Scopus)

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Important Dates

Submission of papers	: June 01, 2017
Notification of Acceptance/Rejection	: July 01, 2017
Camera Ready	: August 01, 2017
Registration	: August 01, 2017
Conference	: August 16-18, 2017

Paper submission at http://www.dirf.org/intech/paper-submission/
Contact: intech@dirf.org OR intech@socio.org.uk

Eighth International Conference on the Applications of Digital Information and Web Technologies (ICADIWT 2017)
March 29-31, 2017
Universidad Autónoma de Ciudad Juarez.
Juarez City, Mexico
www.socio.org.uk/icadiwt
(Proceedings and workshop papers will be published by IOS press and indexed in many databases)
Proceedings will be published in IOS Press series (Frontiers in Artificial Intelligence and Applications (FAIA)
http://www.frontiersinai.com/?q=indexing

The Eigth International Conference on the Applications of Digital Information and Web Technologies (ICADIWT 2017) is a forum for scientists, engineers, and practitioners to present their latest research results, ideas, developments and applications in the areas of Computer Communications, Communication networks, Communication Software Communication Technologies and Applications, and other related themes.

This conference (ICADIWT Edition VIII) will include presentations of contributed papers and state-of-the-art lectures by invited keynote speakers.

Topics

This conference welcomes papers address on, but not limited to, the following research topics:

• Internet Communication

• Internet Technologies

• Web Applications

• Internet Software

• Data Access and Transmission

• Digital Communication Software

• Digital Networks

• Web Communication Interfaces

• Internet Content Processing

• Internet of Things

• Internet of Everything

• Data Communication

• Databases and applications

• Web Systems Engineering Design

• Intelligent Agent Systems

• Semantic Web Studies

• Adaptive Web applications and personalization

• Navigation and hypermedia

• Actuators and sensors

• Robotics and Machine Vision

• Vibration and noise control

• Smart structures

• Motion Control MEMS

• Control

• Automation

• Human-machine interfaces

• Real-time simulation

Important Dates

Submission of papers	January 18, 2017
Notification	February 08, 2017
Camera ready	March 05, 2017
Registration	March 05, 2017
Conference Dates	March 29-31, 2017

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Submissions at- http://www.socio.org.uk/icadiwt/paper-submission/

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