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8th INTERNATIONAL CONFERENCE ON THE THEORY AND PRACTICE OF NATURAL COMPUTING

TPNC 2019

Kingston, Canada

December 9-11, 2019

Co-organized by:

Royal Military College of Canada

Institute for Research Development, Training and Advice
Brussels / London

http://tpnc2019.irdta.eu/
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AIMS:

TPNC is a conference series intending to cover the wide spectrum of computational principles, models and techniques inspired by information processing in nature. TPNC 2019 will reserve significant room for young scholars at the beginning of their career and particular focus will be put on methodology. The conference aims at attracting contributions to nature-inspired models of computation, synthesizing nature by means of computation, nature-inspired materials, and information processing in nature.

VENUE:

TPNC 2019 will take place in Kingston, a city midway between Toronto and Montréal with an important military history. The venue will be:

Royal Military College of Canada
Kingston, Ontario
Canada K7K 7B4

https://www.rmc-cmr.ca/en

SCOPE:

Topics include, but are not limited to:

- Theoretical contributions to:

ant colony optimization
artificial immune systems
artificial life
cellular automata
cognitive computing
collective behaviour
collective intelligence
computational intelligence
computing with words
developmental systems
DNA computing
DNA nanotechnology
evolutionary algorithms
evolutionary computing
fuzzy logic
fuzzy sets
fuzzy systems
genetic algorithms
genetic programming
granular computing
heuristics
intelligent agents
intelligent systems
machine intelligence
metaheuristics
molecular programming
multiobjective optimization
neural networks
quantum communication
quantum computing
quantum information
rough sets
self-organization
soft computing
swarm intelligence
unconventional computing

- Applications of natural computing to:

algorithmics
bioinformatics
control
cryptography
design
economics
graphics
hardware

human-computer interaction
knowledge discovery
learning
logistics
medicine
natural language processing
optimization
pattern recognition
planning and scheduling
programming
robotics
telecommunications
web intelligence

A flexible "theory to/from practice" approach would be the perfect focus for the expected contributions.

STRUCTURE:

TPNC 2019 will consist of:

- invited talks
- peer-reviewed contributions
- posters

INVITED SPEAKERS:

Elisabeth André (University of Augsburg), Human-inspired Socially-aware Interfaces

John McCaskill (European Centre for Living Technology), Analyzing Emergent Dynamics of Evolving Computation in 2D Cellular Automata

Gabriela Ochoa (University of Stirling), Optimisation Trajectories Illuminated

PROGRAMME COMMITTEE:

Mohammad Amin (D-Wave Systems, CA)
Plamen P. Angelov (Lancaster University, UK)
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Sidhartha Panda (Veer Surendra Sai University of Technology, IN)
Elpiniki Papageorgiou (University of Applied Sciences of Thessaly, GR)
Geoffrey Pond (Royal Military College of Canada, CA)
Kai (Alex) Qin (Swinburne University of Technology, AU)
Celso C. Ribeiro (Fluminense Federal University, BR)
José Santos-Victor (Instituto Superior Técnico, PT)
Shahab Shamshirband (Norwegian University of Science and Technology, NO)
Narasimhan Sundararajan (Nanyang Technological University, SG)
José Luis Verdegay (University of Granada, ES)
Fernando J. Von Zuben (University of Campinas, BR)
Xin-She Yang (Middlesex University, UK)
Bo Yuan (Rochester Institute of Technology, US)
Yi Zhang (Sichuan University, CN)
Xudong Zhao (Bohai University, CN)

ORGANIZING COMMITTEE:

Sara Morales (Brussels)
Manuel Parra-Royón (Granada)
Geoffrey Pond (Kingston, co-chair)
David Silva (London, co-chair)
Miguel A. Vega-Rodríguez (Cáceres)

SUBMISSIONS:

Authors are invited to submit non-anonymized papers in English presenting original and unpublished research. Papers should not exceed 12 single-spaced pages (all included) and should be prepared according to the standard format for Springer Verlag's LNCS series (see http://www.springer.com/computer/lncs?SGWID=0-164-6-793341-0).

Submissions have to be uploaded to:

https://easychair.org/conferences/?conf=tpnc2019

PUBLICATIONS:

A volume of proceedings published by Springer in the LNCS series will be available by the time of the conference.

A special issue of a major journal will be later published containing peer-reviewed substantially extended versions of some of the papers contributed to the conference. Submissions to it will be by invitation.

REGISTRATION:

The registration form can be found at:

http://tpnc2019.irdta.eu/Registration.php

DEADLINES (all at 23:59 CET)**:**

Paper submission: August 7, 2019 - EXTENDED -
Notification of paper acceptance or rejection: August 31, 2019
Final version of the paper for the LNCS proceedings: September 7, 2019
Early registration: September 7, 2019
Late registration: November 25, 2019
Submission to the journal special issue: March 11, 2020

QUESTIONS AND FURTHER INFORMATION:

david@irdta.eu

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Royal Military College of Canada / Collège militaire royal du Canada

IRDTA – Institute for Research Development, Training and Advice, Brussels/London