BRAIN

Broad Research in Artificial Intelligence and Neuroscience

Volume 10, Special Issue on Psychiatry June 2019

EduSoft

www.brain.edusoft.ro

About the journal

The aim of this journal is to create links between researchers from apparently different scientific fields, such as Computer Science and Neurology. In fact, there are a lot of topics such as Artificial Intelligence, Cognitive Sciences and Neurosciences that can intersect in the study of the brain and its intelligent functions.

Our journal contains peer-reviewed articles. These articles should be original, unpublished articles of the authors. The peer review process is a blind one. The reviewers are well recognized scientists who are part of our scientific board, and also independent reviewers.

Some innovative young researchers from around the world had the idea to edit and publish the BRAIN journal in order to make an agora of interdisciplinary study of the brain. Young scientists and seniors in artificial intelligence, cognitive sciences and neurology fields are expected to publish their original works in our journal.

Volume 10, Special Issue (June, 2019), ISSN 2067-3957

Editorial Team Editor

in Chief:

BOGDAN PĂTRUŢ, "Alexandru Ioan Cuza" University of Iaşi, Romania

Managing Editor:

• AGATA ASOFRONIEI, EduSoft Publishing House, Bacău, Romania

Editors:

- ANAMARIA CIUBARĂ, Dunărea de Jos University of Galati, Romania
- FRANK EMMERT-STREIB, Tampere University of Technology, Finland
- ANGEL GARRIDO, National University of Distance Education, Spain
- BARNA IANTOVICS, "Petru Maior" University of Târgu Mureş, Romania
- CARMEN HOLOTESCU, "Ioan Slavici" University of Timişoara, Romania
- MONICA PĂTRUŢ, "Vasile Alecsandri" University of Bacău, Romania

ISSN 2068 - 0473

E-ISSN 2067 - 3957

(C) 2019 EduSoft Publishing

Address:

Editura EduSoft ROMANIA 600065 Bacău 9 Mai 82 C 13 Tel. 0040 741 63 81 82

Fax: 0040 234 20 60 90 Web: brain.edusoft.ro

Official E-mail: brain@edusoft.ro

Managing Editor E-mail: agata@edusoft.ro

Scientific board members (Reviewers)

- 1. IOAN ANDONE, "Alexandru Ioan Cuza" University of Iasi, Romania (Artificial Intelligence in Accounting and Management)
- 2. STEFAN ANDREI, Lamar University, Department of Computer Science, Beaumont,

Texas, United States of America (Artificial Intelligence)

3. OVIDIU ANDRONESI, Athinoula A. Martinos Center for Biomedical Imaging,

BRAIN – Broad Research in Artificial Intelligence and Neuroscience

Volume 10, Special Issue (June, 2019), ISSN 2067-3957

Massachusetts General Hospital and Harvard Medical School, Charlestown, Boston, United States of America & "Babes-Bolyai" University of Cluj-Napoca, Romania (Neuroscience, Biophysics, Neuroimaging)

- 4. DORIN BOCU, Transilvania University of Braşov, Braşov, Romania (Mathematics, Computer Science)
- 5. RĂZVAN BOCU, Transilvania University of Braşov, Braşov, Romania (Mathematics, Computer Science)
- 6. CONSTANȚA BODEA, Academy of Economic Studies, Bucharest, Romania

(Cybernetics, Economics, Artificial Intelligence)

- 7. CĂTĂLIN BUIU, Politehnica University of Bucharest, Bucharest, Romania (Robotics)
- 8. GIANLUCA CERIANI, DACOM Srl Milan, Italy (Computer Science)
- 9. PIOTR P CHRUSZCZEWSKI, Polish Academy of Sciences, University of Wroclaw, Poland (Social Sciences)
- 10. DOINA CMECIU, "Vasile Alecsandri" University of Bacau and Europe Direct centre in Bacau, Romania (Semiotics, Literature, Linguistics)
- 11. SVETLANA COJOCARU, Institute of Mathematics and Computer Science, Chisinau, Moldavia (Artificial Intelligence, Natural Language Processing, Mathematics)
- 12. DOMENICO CONSOLI, University of Urbino, Italy (Software systems, Data-mining, Economics)
- 13. DORU COSTACHE, St Andrew's Greek Orthodox Theological College, Sydney College of Divinity, Sydney, Australia (Theology, Philosophy)
- 14. ANA-MARIA CIUBARA (BURLEA), Dunărea de Jos University of Galați, Romania (Psychiatry, Psychology, Neuroscience)
- 15. DAN CRISTEA, "Alexandru Ioan Cuza" University of Iasi, Romania (Natural Language Processing, Linguistics, Artificial Intelligence)
- 16. GABRIELA CZIBULA (ŞERBAN), "Babes-Bolyai" University of Cluj-Napoca,

Romania (Distributed Artificial Intelligence, Natural Language Processing)

- 17. MATTIAS DEHMER, Vienna University of Technology, Austria (Applied Discrete Mathematics)
- 18. OMER DEPERLIOGLU, Afyon Kocatepe University, Afyonkarahisar, Turkey (Computer Programing, M-Learning, Fuzzy Control, Self-directed Learning, Fuzzy Logic Control, Artificial Intelligence)
- 19. FRANCESCA D'ERRICO, Roma Tre University, Rome, Italy (Philosophy,

Communication and Visual Art Department)

- 20. CLAUDIA DIAMANTINI, Polytechnic University of Marche, Ancona, Italy (Artificial Intelligence, Artificial Intelligent Systems)
- 21. IOAN DZITAC, "Aurel Vlaicu" University of Arad, Romania (Artificial Intelligence, Distributed Systems, Education)
- 22. ANGEL GARRIDO, Faculty of Sciences, National University of Distance Education, Madrid, Spain (Mathematics, Physics, Theoretical Computer Science, Artificial Intelligence)
- 23. ANNETTE HOHENBERGER, Cognitive Science Department, Informatics Institute, Middle East Technical University, Ankara, Turkey
- 24. BARNA IANTOVICS, "Petru Maior" University of Târgu Mureş, Romania (Artificial Intelligence, Bio-inspired computing)
- 25. DANIELA JEDER, "Stefan cel Mare" University of Suceava, Romania (Pedagogy, Education)

BRAIN - Broad Research in Artificial Intelligence and Neuroscience

Volume 10, Special Issue (June, 2019), ISSN 2067-3957

- 26. PARVANEH KHOSRAVIZADEH, Sharif University of Technology, Islamic Republic of Iran (Linguistics, Pragmatics, Semantics, Philosophy of Language, Psycholinguistics, and Sociolinguistics)
- 27. UTKU KÖSE, Uşak University, Uşak, Turkey (Artificial Intelligence)
- 28. PIEDAD YUSTE LECIÑENA, Faculty of Philosophy, Department of Philosophy,

National University of Distance Education, Madrid, Spain (History and Philosophy of Sciences) 29.

ILYA LEVIN, Tel Aviv University, Tel Aviv, Israel (Computer Design, Cultural Studies of Information Society, Science and Technology Education)

30. MANUEL LÓPEZ-IBÁÑEZ, IRIDIA, Université Libre de Bruxelles, Belgium

(Metaheuristics, Multicriteria Analysis, Operational Research, Swarm Intelligence)

- 31. LORENZO MAGNANI, University of Pavia, Italy and Sun-Yat Sen University, Canton, China (Cognitive sciences, Logic, Epistemology, Philosophy)
- 32. IOAN MAXIM, "Stefan cel Mare" University of Suceava, Romania (E-learning, Education)
- 33. ANA-MARIA MINUT, "Alexandru Ioan Cuza" University of Iasi, Romania (General Linguistics, Applied Linguistics)
- 34. GRIGOR MOLDOVAN, "Babeş-Bolyai" University of Cluj-Napoca, Romania

(Distributed systems)

- 35. ASLANBEK NAZIEV, Ryazan State University, Ryazan, Ryazan Oblast, Russia (Mathematics)
- 36. ELENA NECHITA, "Vasile Alecsandri" University of Bacau, Romania (Artificial Intelligence)
- 37. BOGDAN PATRUT, "Vasile Alecsandri" University of Bacau, Romania (Software systems, Artificial Intelligence, Natural Language Processing)
- 38. IULIA KARIN PATRUT, University of Trier, Germany (Literature, Hermeneutics, Historical Semantics)
- 39. VALERIY PERMINOV, Tomsk Polytechnic University, Russian Federation

(Mathematical modelling, Informatics)

- 40. CAMELIA MIHAELA PINTEA, "Babeş-Bolyai" University of Cluj-Napoca, Romania (Bio-inspired computing, Distributed Artificial Intelligence)
- 41. IOAN LUCIAN POPA, "Vasile Alecsandri" University of Bacau, Romania (Linguistics)
- 42. BOGDAN O. POPESCU, Romanian Society of Neurology, Bucharest, Romania (Neurology, Neurosurgery, Neuroscience, Biology)
- 43. SAIM RASHEED, King Abdulaziz University, Jeddah, Saudi Arabia (Computer Science, Computer Engineering, Electrical Engineering)
- 44. KAMIL ROMAN, Maria Curie-Sklodowska University in Lublin, Poland (Smart City Concept, Intelligent Transport Systems, Sustainable Urban Development)
- 45. TIBERIU SOCACIU, "Stefan cel Mare" University of Suceava, Romania (Artificial Intelligence, Computer Science)
- 46. HASSAN SOLEIMANI, Payame Noor University, Tehran, Iran (Applied Linguistics)
- 47. IOLANDA TOBOLCEA, "Alexandru Ioan Cuza" University of Iasi, Romania (Clinical Psychology, Education, Speech-language Pathology, Neurology)
- 48. ELENA-MĂDĂLINA VĂTĂMĂNESCU, National University of Political Studies and Public Administration, Bucharest (Social Sciences), Romania
- 49. ZDZISLAW WASIK, Philological School of Higher Education in Wroclaw, Adam Mickiewicz University in Poznan, International Communicology Institute, Poland (General Linguistics, Semiotics)
- 50. DMYTRO ZUBOV, Soochow University, Suzhou, Jiangsu, China (Computer Science)

BRAIN – Broad Research in Artificial Intelligence and Neuroscience Volume 10, Special Issue (June, 2019), ISSN 2067-3957