

B R A I N

**Broad Research in Artificial Intelligence
and Neuroscience**

Volume 9,

**Special Issue on
Educational Psychology**

April, 2018

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 These articles should be original, unpublished articles of the authors.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.

Call for papers

We are seeking papers for our next issue of the BRAIN journal, from academicians, professors, researchers, doctors and clinicians, linguists, psychotherapists, PhD students ... anyone connected to the topics of our journal. We welcome contributions from all over the world.

We plan to put out the next volume of the BRAIN in September 2018. You are invited to write on any topic of our journal. The deadline for sending articles is the **10th of July, 2018**. Send your articles to **brain@edusoft.ro** or sign in to use the online system for submitting papers (**www.brain.edusoft.ro**).

Editorial Team

Editor in Chief:

- **BOGDAN PĂTRUȚ**, "Alexandru Ioan Cuza" University of Iași, Romania

Managing Editor:

- **AGATA ASOFRONIEI**, EduSoft Publishing House, Bacău, Romania

Editors:

- **DIANA PĂVĂLOI**, EduSoft Publishing House, Bacău, Romania
- **ECATERINA FILIMON**, EduSoft Publishing House, Bacău, Romania
- **ADINA GABOR**, EduSoft Publishing House, Bacău, Romania
- **ANGEL GARRIDO**, National University of Distance Education, Spain
- **MONICA PĂTRUȚ**, "Vasile Alecsandri" University of Bacău, Romania
- **BARNA IANTOVICS**, "Petru Maior" University of Târgu Mureș, Romania
- **CARMEN HOLOTESCU**, "Ioan Slavici" University of Timișoara, Romania
- **FRANK EMMERT-STREIB**, Tampere University of Technology, Finland

ISSN 2068 – 0473

E-ISSN 2067 - 3957

(C) 2018 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, E-mail: brain@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, Massachusetts General Hospital and Harvard Medical School, Charlestown, Boston, **United States of America** & "Babes-Bolyai" University of Cluj-Napoca, **Romania** (Neuroscience, Biophysics, Neuroimaging)
4. **CONSTANȚA BODEA**, Academy of Economic Studies, Bucharest, **Romania** (Cybernetics, Economics, Artificial Intelligence)
5. **DOINA CMECIU**, "Vasile Alecsandri" University of Bacau and Europe Direct centre in Bacau, **Romania** (Semiotics, Literature, Linguistics)
6. **SVETLANA COJOCARU**, Institute of Mathematics and Computer Science, Chisinau, **Moldavia** (Artificial Intelligence, Natural Language Processing, Mathematics)
7. **DOMENICO CONSOLI**, University of Urbino, **Italy** (Software systems, Data-mining, Economics)
8. **DORU COSTACHE**, St Andrew's Greek Orthodox Theological College, Sydney College of Divinity, Sydney, **Australia** (Theology, Philosophy)
9. **DAN CRISTEA**, "Alexandru Ioan Cuza" University of Iasi, **Romania** (Natural Language Processing, Linguistics, Artificial Intelligence)
10. **GABRIELA CZIBULA (ȘERBAN)**, "Babes-Bolyai" University of Cluj-Napoca, **Romania** (Distributed Artificial Intelligence, Natural Language Processing)
11. **MATTIAS DEHMER**, Vienna University of Technology, **Austria** (Applied Discrete Mathematics)
12. **CLAUDIA DIAMANTINI**, Polytechnic University of Marche, Ancona, **Italy** (Artificial Intelligence, Artificial Intelligent Systems)
13. **GHEORGHE DUMITRIU**, "Vasile Alecsandri" University of Bacau, **Romania** (Education, Psychology, Sociology)
14. **IOAN DZITAC**, "Aurel Vlaicu" University of Arad, **Romania** (Artificial Intelligence, Distributed Systems, Education)
15. **ANGEL GARRIDO**, Faculty of Sciences, National University of Distance Education, Madrid, **Spain** (Mathematics, Physics, Theoretical Computer Science, Artificial Intelligence)
16. **PAT HAYES**, director of AAAI, Institute for Human and Machine Cognition, affiliated with several Florida universities, **United States of America** (Artificial Intelligence, Cognitive Science, Philosophy, Mathematics)
17. **ANNETTE HOHENBERGER**, Cognitive Science Department, Informatics Institute, Middle East Technical University, Ankara, **Turkey**
18. **BARNA IANTOVICS**, "Petru Maior" University of Târgu Mureș, **Romania** (Artificial Intelligence, Bio-inspired computing)
19. **DANIELA JEDER**, "Stefan cel Mare" University of Suceava, **Romania** (Pedagogy, Education)
20. **PARVANEH KHOSRAVIZADEH**, Sharif University of Technology, **Islamic Republic of Iran** (Linguistics, Pragmatics, Semantics, Philosophy of Language, Psycholinguistics, and Sociolinguistics)
21. **HEATHER K VAN DER LELY**, Department of Psychology, Harvard University United States of America and Centre for Developmental Language Disorders and Cognitive Neuroscience, **United Kingdom** (Developmental Language and Cognitive Neuroscience)
22. **MANUEL LÓPEZ-IBÁÑEZ**, IRIDIA, Université Libre de Bruxelles, **Belgium** (Metaheuristics, Multicriteria Analysis, Operational Research, Swarm Intelligence)

23. **LORENZO MAGNANI**, University of Pavia, **Italy** and Sun-Yat Sen University, Canton, **China** (Cognitive sciences, Logic, Epistemology, Philosophy)
24. **GEORGIOS K. MATIS**, Democritus University of Thrace, Medical School, Neurosurgical Department, University Hospital of Alexandroupolis, **Greece** (Neurosurgery, Neurology, Neuroscience)
25. **IOAN MAXIM**, “Stefan cel Mare” University of Suceava, **Romania** (E-learning, Education)
26. **ANA-MARIA MINUT**, "Alexandru Ioan Cuza" University of Iasi, **Romania** (General Linguistics, Applied Linguistics)
27. **GRIGOR MOLDOVAN**, “Babeş-Bolyai” University of Cluj-Napoca, **Romania** (Distributed systems)
28. **BOGDAN PATRUT**, "Vasile Alecsandri" University of Bacau, **Romania** (Software systems, Artificial Intelligence, Natural Language Processing)
29. **IULIA KARIN PATRUT**, University of Trier, **Germany** (Literature, Hermeneutics, Historical Semantics)
30. **VALERIY PERMINOV**, Tomsk Polytechnic University, **Russian Federation** (Mathematical modelling, Informatics)
31. **CAMELIA MIHAELA PINTEA**, "Babeş-Bolyai" University of Cluj-Napoca, **Romania** (Bio-inspired computing, Distributed Artificial Intelligence)
32. **ZVEZDAN PIRTOSEK**, University Medical Centre, Ljubljana, **Slovenia** (Clinical studies, Neurophysiology, Neurology, Neurosurgery, Neuroscience)
33. **BOGDAN O. POPESCU**, Romanian Society of Neurology, Bucharest, **Romania** (Neurology, Neurosurgery, Neuroscience, Biology)
34. **MERRITT RUHLEN**, Department of Anthropological Sciences, Stanford University, **United States of America** (Anthropological Linguistics)
35. **IOLANDA TOBOLCEA**, "Alexandru Ioan Cuza" University of Iasi, **Romania** (Clinical Psychology, Education, Speech-language pathology, Neurology)
36. **ZDZISLAW WASIK**, Philological School of Higher Education in Wroclaw, Adam Mickiewicz University in Poznan, International Communicology Institute, **Poland** (General Linguistics, Semiotics)
37. **NORA WIEDENMANN**, Munich, **Germany** (Psycholinguistics, Linguistics)
38. **PIEDAD YUSTE LECIÑENA**, Faculty of Philosophy, Department of Philosophy, National University of Distance Education, Madrid, **Spain** (History and Philosophy of Sciences)

Consultant reviewers

39. **DORIN BOCU**, Transilvania University of Braşov, Braşov, **Romania** (Mathematics, Computer Science)
40. **RĂZVAN BOCU**, Transilvania University of Braşov, Braşov, **Romania** (Mathematics, Computer Science)
41. **CĂTĂLIN BUIU**, Politehnica University of Bucharest, Bucharest, **Romania** (Robotics)
42. **GIANLUCA CERIANI**, DACOM Srl Milan, **Italy** (Computer Science)
43. **MARIANA COSTACHE**, "M. Costache" Psychology Office, Bacau, **Romania** (Psychology, Psychiatry, Neuroscience)
44. **PIOTR P CHRUSZCZEWSKI**, Polish Academy of Sciences, University of Wroclaw, **Poland** (Social Sciences)
45. **UTKU KÖSE**, Uşak University, Uşak, **Turkey** (Artificial Intelligence)
46. **IOAN MAXIM**, "Stefan cel Mare" University of Suceava, **Romania** (Computer Science)
47. **ELENA NECHITA**, "Vasile Alecsandri" University of Bacau, **Romania** (Artificial Intelligence)
48. **IOAN - LUCIAN POPA**, "Vasile Alecsandri" University of Bacau, **Romania** (Linguistics)

49. **SAIM RASHEED**, King Abdulaziz University, Jeddah, **Saudi Arabia** (Computer Science, Computer Engineering, Electrical Engineering)
50. **KAMIL ROMAN**, Maria Curie-Sklodowska University in Lublin, **Poland** (Smart City concept, Intelligent Transport systems, Sustainable urban development)
51. **TIBERIU SOCACIU**, "Stefan cel Mare" University of Suceava, **Romania** (Artificial Intelligence, Computer Science)
52. **HASSAN SOLEIMANI**, Payame Noor University, Tehran, **Iran** (Applied Linguistics)
53. **ELENA-MĂDĂLINA VĂTĂMĂNESCU**, National University of Political Studies and Public Administration, Bucharest (Social Sciences), **Romania**
54. **DMYTRO ZUBOV**, Soochow University, Suzhou, Jiangsu, **China** (Computer Science)