

B R A I N

**Broad Research in Artificial Intelligence
and Neuroscience**

**Volume 3, Issue 2
May 2012**

EduSoft

www.brain.broadresearch.org

About the BRAInitiative

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 (in the BRAINovations and BRAINstorming sections) 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 These articles should be original, unpublished articles of the authors.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 issue (Volume 3, Issue #3) of the BRAIN in August 2012. You are invited to write on any topic of our journal. The deadline for sending articles is **July 10, 2012**. 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**, "Vasile Alecsandri" University of Bacau, Romania

Editors:

- **IOANA BOGHIAN**, "Vasile Alecsandri" University of Bacau, Romania
- **ANGEL GARRIDO**, National University of Distance Education, Spain
- **NORA WIEDENMANN**, Munich, Germany

Proofreaders:

- **RUXANDRA ALEXANDRU**, University of Minho, Portugal (Portuguese)
- **IOANA BOGHIAN**, "Vasile Alecsandri" University of Bacau, Romania (English, Romanian)
- **VERONICA GRECU**, "Vasile Alecsandri" University of Bacau, Romania (French)
- **GIANLUCA CERIANI**, Milano, Italy (Italian)
- **ANDRIEȘ VALENTINA**, University of Edinburgh, United Kingdom (English, Spanish)
- **ANGEL GARRIDO**, National University of Distance Education, Spain (Spanish)
- **BARNA KOVACS**, Colegiul National "Al. Papiu I." Tg-Mures, Romania (Hungarian)
- **ANDRA MĂCIUCĂ**, Milano, Italy (Italian)
- **NORA WIEDENMANN**, Munich, Germany (English, German)
- **JEFFREY WOOD**, University of Manchester, United Kingdom (English)

ISSN 2068 - 0473

E-ISSN 2067 - 3957

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. **GIANLUCA CERIANI**, DACOM Srl, Milan, **Italy** (Software Systems, Human Computer Interface)
6. **DOINA CMECIU**, "Vasile Alecsandri" University of Bacau and Europe Direct centre in Bacau, **Romania** (Semiotics, Literature, Linguistics)
7. **SVETLANA COJOCARU**, Institute of Mathematics and Computer Science, Chisinau, **Moldavia** (Artificial Intelligence, Natural Language Processing, Mathematics)
8. **LOUISE CONNELL**, University of Manchester, **United Kingdom** (Psychology, Cognitive Sciences)
9. **DOMENICO CONSOLI**, University of Urbino, **Italy** (Software systems, Data-mining, Economics)
10. **DORU COSTACHE**, St Andrew's Greek Orthodox Theological College, Sydney College of Divinity, Sydney, **Australia** (Theology, Philosophy)
11. **MARIANA COSTACHE**, "M. Costache" Psychology Office, Bacau, **Romania** (Psychology, Psychiatry, Neuroscience)
12. **DAN CRISTEA**, "Alexandru Ioan Cuza" University of Iasi, **Romania** (Natural Language Processing, Linguistics, Artificial Intelligence)
13. **GABRIELA CZIBULA (ȘERBAN)**, "Babes-Bolyai" University of Cluj-Napoca, **Romania** (Distributed Artificial Intelligence, Natural Language Processing)
14. **MATTIAS DEHMER**, Vienna University of Technology, **Austria** (Applied Discrete Mathematics)
15. **CLAUDIA DIAMANTINI**, Polytechnic University of Marche, Ancona, **Italy** (Artificial Intelligence, Artificial Intelligent Systems)
16. **GHEORGHE DUMITRIU**, "Vasile Alecsandri" University of Bacau, **Romania** (Education, Psychology, Sociology)
17. **IOAN DZITAC**, "Aurel Vlaicu" University of Arad, **Romania** (Artificial Intelligence, Distributed Systems, Education)
18. **ANGEL GARRIDO**, Faculty of Sciences, National University of Distance Education, Madrid, **Spain** (Mathematics, Physics, Theoretical Computer Science, Artificial Intelligence)
19. **PAT HAYES**, director of AAI, Institute for Human and Machine Cognition, affiliated with several Florida universities, **United States of America** (Artificial Intelligence, Cognitive Science, Philosophy, Mathematics)
20. **ANNETTE HOHENBERGER**, Cognitive Science Department, Informatics Institut, Middle East Technical University, Ankara, **Turkey**

21. **BARNA IANTOVICS**, "Petru Maior" University of Targu Mures, **Romania** (Artificial Intelligence, Bio-inspired computing)
22. **DANIELA JEDER**, "Stefan cel Mare" University of Suceava, **Romania** (Pedagogy, Education)
23. **PARVANEH KHOSRAVIZADEH**, Sharif University of Technology, **Islamic Republic of Iran** (Linguistics, Pragmatics, Semantics, Philosophy of Language, Psycholinguistics, and Sociolinguistics)
24. **HEATHER K J 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)
25. **MANUEL LÓPEZ-IBÁÑEZ**, IRIDIA, Université Libre de Bruxelles, **Belgium** (Metaheuristics, Multicriteria Analysis, Operational Research, Swarm Intelligence)
26. **LORENZO MAGNANI**, University of Pavia, **Italy** and Sun-Yat Sen University, Canton, **China** (Cognitive sciences, Logic, Epistemology, Philosophy)
27. **GEORGIOS K. MATIS**, Democritus University of Thrace, Medical School, Neurosurgical Department, University Hospital of Alexandroupolis, **Greece** (Neurosurgery, Neurology, Neuroscience)
28. **IOAN MAXIM**, "Stefan cel Mare" University of Suceava, **Romania** (E-learning, Education)
29. **ANA-MARIA MINUT**, "Alexandru Ioan Cuza" University of Iasi, **Romania** (General Linguistics, Applied Linguistics)
30. **GRIGOR MOLDOVAN**, "Babeş-Bolyai" University of Cluj-Napoca, **Romania** (Distributed systems)
31. **ELENA NECHITA**, "Vasile Alecsandri" University of Bacau, **Romania** (Artificial Intelligence, Bio-inspired computing, Statistics, Mathematics)
32. **BOGDAN PATRUT**, "Vasile Alecsandri" University of Bacau, **Romania** (Software systems, Artificial Intelligence, Natural Language Processing)
33. **IULIA KARIN PATRUT**, University of Trier, **Germany** (Literature, Hermeneutics, Historical Semantics)
34. **VALERIY PERMINOV**, Belovo Branch of Kemerovo State University, **Russian Federation** (Mathematical modelling, Informatics)
35. **CAMELIA MIHAELA PINTEA**, "Babes-Bolyai" University of Cluj-Napoca, **Romania** (Bio-inspired computing, Distributed Artificial Intelligence)
36. **ZVEZDAN PIRTOSEK**, University Medical Centre, Ljubljana, **Slovenia** (Clinical studies, Neurophysiology, Neurology, Neurosurgery, Neuroscience)
37. **BOGDAN O. POPESCU**, Romanian Society of Neurology, Bucharest, **Romania** (Neurology, Neurosurgery, Neuroscience, Biology)
38. **MERRITT RUHLEN**, Department of Anthropological Sciences, Stanford University, **United States of America** (Anthropological Linguistics)
39. **IOLANDA TOBOLCEA**, "Alexandru Ioan Cuza" University of Iasi, **Romania** (Clinical Psychology, Education, Speech-language pathology, Neurology)
40. **ZDZISLAW WASIK**, Philological School of Higher Education in Wroclaw, Adam Mickiewicz University in Poznan, International Communicology Institute, **Poland** (General Linguistics, Semiotics)
41. **NORA WIEDENMANN**, Munich, **Germany** (Psycholinguistics, Linguistics)
42. **PIEDAD YUSTE LECIÑENA**, Faculty of Philosophy, Department of Philosophy, National University of Distance Education, Madrid, **Spain** (History and Philosophy of Sciences)