

# LISTĂ PUBLICAȚII

Prof. dr. ing. Monica Borda

## A. Teza de doctorat

(Titlul tezei, domeniul și anul susținerii)

„Contributii la analiza aproximativa a circuitelor electronice”, analiza de semnale si sisteme neliniare, Institutul Politehnic Bucuresti, 1987.

## B. Cărți și capitole din cărți

(Autorii, titlul cărții, editura, locul și anul publicării, nr. pagini, ISBN)

1. **M. Borda** – *Fundamentals in Information Theory and Coding* – Springer 2011, nr. pag. 509, ISBN: 978-3-642-20346-6.
2. **M. Borda** – *Information Theory and Coding*, Editura UT PRES, 2007, 349 p., ISBN 978-973-662-286-1
3. T. Adam, K. Amadou, **M. Borda.**, P. Serfozo, A. Varga – *Digitalis Jelprocesszorok es infokommunicatios alkalmazasaik*, Miskolc 2006, ISBN 963-229-254-5.
4. T. Băjenescu, **M. Borda** – *Securitatea în informatică și telecomunicații*, 2001, , 446 p., Ed. Dacia, Cluj-Napoca, ISBN 973-35-1208-7.
5. R. Malutan, **M. Borda**, B. Belean, *Traitement du signal génomique - Travaux pratiques*, UT Press, 2011.
6. Sorin Pop, Romulus Terebes, **Monica Borda**, – “*Traitement du signal et d’image par ondelettes. Travaux pratiques.*”, Editura UTPRES, Cluj-Napoca, 53pp, ISBN: 978-973-662-427-8, 2008.

## C. Lucrări științifice indexate ISI/BDI (2000-2011)

(Autorii, titlul lucrării, conferința/revista, locul și data publicării, paginile, ISBN/ISSN, indexările)

### Jurnale ISI

1. Terebes R, **Borda M**, Pop S, Laviaille O, Germain C, Ludusan C, *A Novel Diffusion Filter For Image Restoration And Enhancement*, Revue Roumaine Des Sciences Techniques-Serie Electrotechnique Et Energetique, ISSN: 0035-4066, Vol. 55(3), 310-319, 2010
2. Malutan R, Vilda PG, **Borda M**, *Independent component analysis algorithms for microarray data analysis*, Intelligent Data Analysis, ISSN: 1088-467X, Vol. 14(2), 193-206, 2010
3. Pop S, Laviaille O, Donias M, Terebes R, **Borda M**, Guillon S, Keskes N, *A PDE-based approach to three-dimensional seismic data fusion*, IEEE Transactions On Geoscience And Remote Sensing, ISSN: 0196-2892, Vol. 46(5), 1385-1393, 2008
4. Pop S, Laviaille O, Terebes R, **Borda M**, *A new partial differential equation-based approach for 3D data denoising and edge preserving*, Revue Roumaine Des Sciences Techniques-Serie Electrotechnique Et Energetique, ISSN: 0035-4066, Vol. 52(4), 407-418, 2007

5. **Borda M**, Nafornta I, Isar D, Isar A, *New instantaneous frequency estimation method based on image processing techniques*, Journal Of Electronic Imaging, ISSN: 1017-9909, Vol. 14(2), 023013, 2005
6. Ambroze A, Wade G, Serdean C, Tomlinson M, Stander J, **Borda M**, *Turbo code protection of video watermark channel*, IEE Proceedings-Vision Image And Signal Processing, ISSN: 1350-245X, Vol. 148(1), 54-58, 2001

### Reviste indexate BDI

1. Malutan R., Gomez Vilda P, **M. Borda**, *Oligonucleotide microarray probe corection by fixed point ICA Algorithm*, Distributed computing, Artificial intelligence, Bioinformatics, Salamanca 2009, Lecture Notes in Computer Science LNCS 5518, Springer, ISSN 0302-9743
2. B. Belean, **M. Borda**, A. Fazakas, *Hardware strategies for image processing in an FPGA based microarray image processing*, Acta Technica Napocensis – Electronics and Communications, Vol. 50, no. 2, pp. 1 – 4, 2009.
3. **M. Borda**, O. Tornea, T Hodorocea, *Secret writing by DNA hybridization*, Acta Technica Napocensis – Electronics and Communications, Vol. 50, No. 2, pp. 21 – 24, 2009.
4. S. Pop, R. Terebes, **M. Borda**, O. Laviaille –“*A PDE-based approach for image fusion*”, Lecture Notes in Computer Science, LNCS 4678, pp. 121-131, August 2007
5. C. Nafornta, Al.Isar, **M.Borda**- *Improved Pixel-Wise Masking for Image Watermarking*, Lecture Notes in Computer Science (Multimedia Content Representation, Classification and Security), vol. 4105, 2006
6. IR. Terebes, O.Laviaille, **M. Borda**, P. Baylou- *Flow Coherence Diffusion. Linear and Nonlinear Case* , Lecture Notes in Computer Science, Springer-Verlag, ISSN 0302-9743, vol. 3708/2005, pag. 316-322, 2005
7. **M. Borda** - *Digital watermaking basics* , Acta Technica Napocensis Vol 42, Nr. 1, 2002, p. 48-59
8. V. Deac, **M. Borda** – *Secure client-server connecting protocol using Araki-Uehara-Imamura digital signatures*, Acta Technica Napocensis, Vol. 42, Nr. 1, 2002, p. 27-31
9. R. Major V. Deac , **M. Borda**, G. Wade, C. Serdean – *Digital watermarking using hash functions*, Acta Technica Napocensis, Vol. 42, Nr. 1, 2002, p. 60-64
10. R. Terebes, **M. Borda**, I. Nafornta- *Morphological segmentation of cells in contact*, Buletinul Stiintific al UP Timisoara, nr.1, 2000.
11. Bodo, R. Terebes, **M. Borda** - *A watershed algorithm and it's application in image segmentation*, Acta Tehnica Napocensis, mai 2000.

### Conferinte indexate BDI

1. B. Belean, **M. Borda**, A.Fazakas, *Hardware Implementation for Edge Detection in cDNA Microarray Images*, International Conference on Biomedical Electronics and Devices, BIODEVICES 2009, p. 359-363, ISBN 978-989-8111-64-7.
2. R. Terebes, O. Laviaille, C. Germain, **M. Borda**, S Pop, *Asymmetric anisotropic diffusion*, Image & Video Filtering: Partial differential equations, 2009 IEEE International Conference on Image Processing, ICIP 2009 Cairo, Egipt
3. S. Pop, R. Terebes, **M. Borda**, O. Laviaille - *A new discrete PDE-based fusion model*, EUROCON 2009, p. 2075-2082, 18-23 Mai2009, Sankt Petersburg, Rusia.
4. B. Belean, A. Fazakas, R. Malutan, **M. Borda**, *Hardware implementation of microarray image segmentation*, AQTR 2008, IEEE International Conference on Automation, Quality and Testing, Robotics, Cluj Napoca, Romania, ISBN: 978-1-4244-2577-8, Vol. 3, pp. 292 – 295.
5. B. Belean, **M. Borda**, A. Fazakas - *Adaptive Microarray Image Acquisition System and Microarray Image Processing Using FPGA Technology*, Knowledge-Based Intelligent Information and Engineering Systems, 12th International Conference, KES 2008, Zagreb, Croatia, September 3-5, 2008, Proceedings, Part III. Lecture Notes in Computer Science 5179 Springer 2008, ISBN 978-3-540-85566-8, 327-334
6. T. Hodorocea, M-F Vaida, **M. Borda**, S. Striletchi -*A Java Crypto Implementation of DNA Provider Featuring Complexity in Theory and Practice*, Proceedings of the ITI 2008, 30<sup>th</sup> International Conference on INFORMATION TECHNOLOGY INTERFACES, ISBN 978-953-7138-12-7, ISSN 1330-1012, pp. 607 – 612, 2008
7. R. Malutan, A. Bricier, **M. Borda**, P Gómez P, *Microarray Griding based on Harris corner detection* 19<sup>th</sup> Biosignal Conference Proceedings – Analysis of Biomedicas Signals and Images, ISBN 978-80-214-3612-1, pp. 124-134, 2008

8. Fazakas, L. Feștilă, **M. Borda**, B. Belean, "*Image Acquisition Solutions for FPGA development boards targeting microarray image processing algorithms*", Applied Electronics 2008 International Conference, 10-11 September 2008, Pilsen, Czech Republic, ISBN 987-80-7043-654-7, pp. 49-52
9. R. Malutan, P. Gomez Vilda, **M. Borda**, *Independent Component Analysis algorithms for microarray data analysis*, The Sixth International Conference on Bioinformatics of Genome Regulation and Structure (BGRS'2008) Novosibirsk, Russia June 22-28, 2008
10. R Terebes, **M. Borda**, C. Germain, O. Laviaille, S. Pop - "*Asymmetric directional diffusion based image filtering and enhancement*", Proceedings of the IEEE-TTTC International Conference on Automation, Quality and Testing, Robotics, AQTR 2008, vol.3, pp. 413-418, ISBN 978-1-4244-2576-1, DOI 0.1109/AQTR.2008.4588954, 2008 (conferinta indexata ISI proceedings)
11. R Terebes, **M Borda**, C.Ludusan, S Pop - "*Image restoration using directional diffusion and shock filters*", Proceedings of the Eight IASTED Conference on Visualization, Imaging and Image Processing, September 1-3, 2008, Palma de Mallorca, Spania, pp. 274-279, 2008 (conferinta indexata ISI proceedings)
12. S. Pop, R. Terebes, **M Borda**, S. Guillon, N. Keskes, P. Baylou, O. Laviaille, -"*3D seismic data fusion and filtering using a PDE-based approach*", IEEE International Conference on Image Processing, ICIP2007, 13-16 September 2007, San Antonio, USA.
13. S. Pop, R. Terebes, **M. Borda**, O. Laviaille -"*Low-level fusion: a PDE-based approach*", IEEE International Conference on Information Fusion, Fusion2007, 9-12 Juillet 2007, Québec, Canada.
14. S. Pop, R. Terebes, **M. Borda**, O. Laviaille -"*Pixel-level fusion: a PDE-based approach*", IEEE International Symposium on Signal, Circuits & Systems, ISSCS2007, 12-13 Juillet 2007, Iasi, Romania.
15. S.Pop, R. Terebes, **M. Borda**, O. Laviaille, I. Voicu, P. Baylou - "*3D Directional Diffusion*", The International Conference on "Computer as a tool", EUROCON 2005, Volume 2, pp. 955 – 958, Belgrade, Serbia & Montenegro.
16. **M.Borda**, "*Digital Rights Protection – A Great Challenge of the New Millenium*", 7<sup>th</sup> IEEE International Conference on Telecommunications in Modern Satellite, Cable and Broadcasting Services TELSIKS'2005, Serbia and Montenegro, Vol.1, pp. 207-214, ISBN 86-85195-28-4, 2005 – **lucrare invitata**
17. F.Diaz, R.Malutan, P.Gomez, V.Rodeelar, R.Martinez, **M.Borda**, "*Low Pass Frequency Domain Filtering of Oligonucleotide Microarray Data Images*", IEEE International Symposium on Signals, Circuits and Systems ISSCS'2005, Iasi, Romania, Vol. 2, pp. 477- 480, ISBN 0-7803-9029-6, 2005.
18. M.Pop, V.Rodeelar, C.Concejero, **M.Borda**, "*FPGA Implementations Evaluation of a Vectorial Quantifier for Speech Classification*", IEEE International Symposium on Signals, Circuits and Systems ISSCS'2005, Iasi, Romania, Vol. 2, pp. 645-648, ISBN 0-7803-9029-6, 2005
19. I.Voicu, **M.Borda**, "*Image Compression Using Complex Wavelet Transform*", Proceedings of the IEEE International Conference on "Computer as a tool" EUROCON 2005, Belgrade, Serbia and Montenegro, ISBN 1-4244-0050-3, pp. 919-12 922, 2005
20. I.Voicu, **M.Borda**, „*New Method of Design Filters for Dual Tree Complex Wavelet Transform*”, IEEE International Symposium on Signals, Circuits and Systems ISSCS'2005, Iasi, Romania, Vol. 2, pp. 437-440, ISBN 0-7803-9029-6
21. C.Naornita, A.Isar, **M.Borda**, "*Image watermarking based on the discrete Wavelet transform statistical characteristics*, Proceedings of the IEEE International Conference on "Computer as a tool" EUROCON 2005, Belgrade, Serbia and Montenegro, ISBN 1- 4244-0050-3, pp. 943-946, 2005
22. R. Terebes, **M. Borda**, B. Yuan, O.Laviaille, P. Baylou - *A new PDE based approach for image restoration and enhancement using robust diffusion directions and directional derivatives based diffusivities*, Proceedings of the 7th International Conference on Signal Processing ICSP2004, Beijing, China, ISBN 0-7803-8406-7, pag.707-712, Aug.31-Sept.4, 2004
23. **M. Borda**, I. Naornita, „*Digital Watermarking–Principles and Applications*”, Proceedings of the IEEE International Conference “Communications 2004”, Military Technical Academy, “Politehnica” University of Bucharest, “Electronica 2000” Foundation and IEEE Romanian Section, Bucharest, Romania, June 03-05, 2004, Volume 1, pp. 41-54, ISBN 973-640-035-2
24. R. Terebes, O. Laviaille, P. Baylou, **M. Borda** - *Flow Coherence Diffusion*, Third International Workshop on Spectral Methods and Multirate Signal Processing (SMMS2003), 13-14 Septembrie, 2003, Barcelona, Spania
25. **M. Borda**, I. Naornita, A. Isar - *New instantaneous frequency estimation method based on the use of image processing techniques*, IS&T/SPIE 15<sup>th</sup> Annual Symposium on Electronic Imaging: Science and Technology, 20-24 ianuarie 2003, Santa Clara, California, SUA

26. R. Terebes, O. Laviaille, P. Baylou, **M. Borda** – *Mixed anisotropic diffusion*, ICPR 2002 Quebec, Canada, aug. 2002.
27. R. Terebes, **M. Borda**, B. Yuan, O. Laviaille, P. Baylou – *Adaptive filtering using morphological operators and genetic algorithms*, Proceeding of ICSP'02, Beijing, China, p. 853-857, 2002, ISBN: 0-7803-7488-6.

#### **D. Lucrari in reviste si volume de conferinte neindexate ISI/BDI**

1. Ludusan, O. Laviaille, S. Pop, R. Terebes, **M. Borda** -"An improved method for directional image smoothing based on structure tensors and vector field visualization techniques" Buletinul Stiintific al Universitatii Politehnica din Timisoara, Seria Electronica si Telecomunicatii, tomul 53 (67), Fascicola 2, 2008, pp. 124-128, ISSN 1583-3380
1. R. Malutan, A. Bricier, **M. Borda**, P. Gomez, *Microarray Image Processing Using Harris Corner Detection Method*, Editura Politehnica, Buletinul Stiintific al Universitatii "POLITEHNICA" din Timisoara, Tomul 53 (67), Fascicola 2, 2008, ISSN 1583-3380, pp. 135-139
2. R. Terebes, **M. Borda**, C. Ludusan, S. Pop -"A combined fusion-diffusion approach for image filtering and enhancement", Buletinul Stiintific al Universitatii Politehnica din Timisoara, Seria Electronica si Telecomunicatii, tomul 53 (67), Fascicola 2, 2008, pp. 103-108, ISSN 1583-3380
5. Malutan, **M. Borda**., P.Gomez,F. Diaz,- *Hybridization modelling in estimation of oligonucleotide microarray expression*-,Scientific Bulletin of the Politehnica University of Timisoara, Transactions on Electronics and Communications, vol.50(64),no.2,pp.29-33, ISBN 1583-3380, 2006
6. M. A. Ajo, G. Fericean, **M. Borda**, V. Rodellar- *An IP design of the idea cryptographic algorithm*,Scientific Bulletin of the Politehnica University of Timisoara, Transactions on Electronics and Communications, tom.51(65),no.2,pp.34-38, ISBN 1583-3380, 2006
7. C. Nafornta, Al. Isar, **M. Borda**, -*Pixel-wise masking for watermarking using local standard deviation and wavelet compression*, Scientific Bulletin of the Politehnica University of Timisoara, Transactions on Electronics and Communications, tom.51(65),no.2,pp.146-151, ISBN 1583- 3380, 2006
8. R. Terebes, **M. Borda**, I. Nafornta - *Image Filtering and Enhancement Using Directional and Anisotropic Diffusion Techniques*,Buletinul Stiintific al Universitatii Politehnica din Timisoara, tom 51(65), fascicola 2,pp. 85-91, ISSN 1583-3380, 2006
9. O. Laviaille, S. Pop, R. Terebes, **M. Borda**–"Fusion –Diffusion d'images : approche par EDP", XXI Colloque GRETSI 2007, 11-14 Septembre 2007, Troyes, France.
10. G.Fericean, **M.Borda**, „*Cryptographic Security for JPEG Compressed Images*”, 2005, DSP-MCOM, Kosice, Slovak Republic.
11. C.Nafornta, **M.Borda**, “*Multiple Embedding in Wavelet Subbands for Robust Image Watermarking*”, *The 2005 International TICSP Workshop on Spectral Methods and Multirate Signal Processing SMMSP'2005*, Riga, Letonia, 2005 pp.135-140, ISBN 952-15-1366-7
12. F.Vancea, C.Vancea , **M.Borda**, “*Minesweeping an Encrypted JPEG Image*”, *The 2005 International TICSP Workshop on Spectral Methods and Multirate Signal Processing SMMSP'2005*, Riga, Letonia, 2005, pp.85-88, ISBN 952-15-1366-7
13. R. Terebes, **M. Borda**, O. Laviaille, P. Baylou, S. Pop, T. Adam – “*Linear Flow Coherence Diffusion*”, *International Carpathian Control Conference, ICC3 2005*, vol 2. pp. 65-71, Miskolc, Hungary.
14. **M. Borda** – *Principles of watermarking*, Conference on Energetics and Electrical Engineering, Cluj-Napoca, 2003, pp. 31-40 – lucrare invitata
15. R. Terebes, O. Laviaille, **M. Borda**, P. Baylou, T. Adam - A. *Adaptive Smoothing Using Anisotropic Diffusion and Median Filter Based Diffusivities*, 4<sup>th</sup> Workshop on European Scientific and Industrial Collaboration, 28-30 mai 2003, Miskolc, Ungaria
16. R. Major, **M. Borda**, K. Amadou – *Hash functions for spatial image watermarking*, *International Scientific Conference microCAD*, 6-7 martie 2003, Miskolc, Ungaria, pp. 39-44
17. R. Terebes, O. Laviaille, P. Baylou, **M. Borda** – *Directional anisotropic diffusion*, EUSIPCO, Toulouse, Franta, 2002
18. R. Terebes, O. Laviaille, **M. Borda**, P. Baylou – *Anisotropic diffusion of strongly oriented patterns*, *Proceedings of the International workshop “Trends and recent achievements in information tecnology”*, UT Press, Cluj-Napoca, 2002, p. 102 –107, ISBN: 973-8335-349.
19. V. Deac, **M. Borda** – *A Cryptographic system for a secure client-server communication*, *Proceedings of the International workshop “Trends and recent achievements in information tecnology”*, UT Press, Cluj-Napoca, 2002, p. 168-173, ISBN: 973-8335-349.
20. R. Terebes, O. Laviaille, P. Baylou, **M. Borda** – *Gradient field gradient estimation* – 8ath European Congress for Steorology Bordeaux, France 2001.

## **E. Brevete (distincții)**

Cerere brevet național OSIM, titlul „Metoda și arhitectura pentru adresarea automată a imaginilor microarray”, 2010, medaliată cu aur (salon IWIS Varsovia 2010) și cu argint (INVENTIKA București 2010).

## **F. Granturi / contracte de cercetare (2000-2011)**

Contracte cercetare

1. Program PN2 IDEI - cod CNCIS 909/2007 –*Sistem de achiziție și prelucrare de imagini genomice livrate de microarray-uri cDNA* 2007-2010. **Director grant**
2. Grant de cercetare CNCIS/2006, cod CNCIS 1038, tip A - *Metode moderne în analiza și prelucrarea imaginilor*, perioada 2004-2006. **Director grant**
3. Grant de cercetare ANSTI/CNCIS tema nr. 52/153, 33531/2002, *Marcarea imaginilor dinamice în domeniul transformatelor pentru autentificarea proprietăților intelectuale asupra acestora*, perioada 2003-2005, **Director grant**
4. Collaborative research agreement between the University of Plymouth UK and the Technical University of Cluj-Napoca Ro in *Video Watermarking*, nr. 33, 11.11.1999. **Director contract.**
5. Grant CNFIS-Banca Mondială nr. 46175, tema 188/1, program major : *Dezvoltarea aptitudinilor practice și a caracterului aplicativ al învățământului de scruta durată în cadrul colegiului UTEA al UTCN*, perioada 1998-2001. **Responsabil contract**

Contracte instituționale

6. Proiect strategic cu finanțare UE nr. 78534/2010 – QDOC, *Cresterea calitatii studiilor doctorale in stiinte ingineresti pentru sprijinirea dezvoltarii societatii bazate pe cunoastere*, valoare 5 000 000 EUR., **manager proiect**
7. Proiect strategic cu finanțare UE nr.60078/2009 – *SIDOC : Dezvoltarea studiilor doctorale in stiinte ingineresti in sprijinul cresterii economice si dezvoltarii sociale*, valoare 5000000 Euro, **assistant manager.**
8. SOCRATES Programme between the Universidad Politécnica de Madrid, Spain and TUC-N in *Communications area, 2003-present. Contact person.*
9. SOCRATES Programme between the Tampere University of Technology, Finland and TUC-N in *Communications area, 2003-2006. Contact person.*
10. SOCRATES Programme between the ENSEIRB (Bordeaux 1), France and TUC-N in *Communications area, 2003-present. Contact person.*