

# CURRICULUM VITAE

Ventzeslav Valev  
Full Professor

Fellow of the International Association of Pattern Recognition (IAPR)

M.S. in Computer Science

M.S. in Mathematics

PhD in Computer Science

Doctor of Mathematical Sciences

## I. Address

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## II. Education

**M.S. in Computer Science**, Wroclaw University of Technology, Faculty of Electronics, Institute of Technical Cybernetics, Wroclaw, Poland.

**M.S. in Mathematics**, University of Wroclaw, Faculty of Mathematics, Physics and Chemistry, Institute of Mathematics, Wroclaw, Poland.

## III. Degrees

**Ph.D. in Computer Science**, Dorodnitsyn Computing Centre of the Russian Academy of Sciences, Moscow, Russian Federation.

**Doctor of Mathematical Sciences (Dr. Math. S.)**, Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences, Sofia, Bulgaria.

## IV. Personal Information

**Citizenship:** United States

**Languages:** English, Russian, Polish, Bulgarian - Fluent; French, German - Satisfactory

## V. International Scientific Awards and Recognitions

**Fellow** of the International Association for Pattern Recognition (IAPR), granted by Fellow Award Committee of IAPR in 1998 for contribution to pattern recognition theory and for service to IAPR; <http://www.iapr.org/>.

**Member of the Governing Board** of the International Association for Pattern Recognition (IAPR) as a representative of the Bulgarian Association of Pattern Recognition during the period 1990-2002.

**Distinguished Service Award** for dedicated service for Saint Louis University, 2005, St. Louis, Missouri, USA.

**A frame for recognition of outstanding service** as a Visiting Professor at the School of Computing, University of North Florida, Jacksonville, Florida for academic year 2013/2014.

**Member of the International Association of Engineers (IAENG).**

**Reviewer for the National Science Centre, Poland;** <http://www.ncn.gov.pl>

**Current h-index:** 10

## **VI. Academic Appointments**

- Bulgarian Academy of Sciences, Institute of Mathematics and Informatics, Department of Artificial Intelligence, Sofia, Bulgaria; Associate Professor, 1988 – 1997; Professor – 2001; Associate Member (honored position) – since August 2010.
- Technical University Berlin, Institute of Technical Informatics, Department of Computer Vision, Berlin, Germany; Visiting Professor, May - July 1993, supported by the European Union.
- Polytechnic University of Catalonia, Department of Informatics, Barcelona, Spain; Visiting Professor, September 1993, supported by the program TEMPUS of the European Union.
- Wroclaw University of Technology, Faculty of Electronics, Department of Systems and Computer Networks, Wroclaw, Poland; Visiting Professor, January - February 1996, supported by the Bulgarian Ministry of Higher Education.
- Friedrich-Alexander University Erlangen-Nuremberg, Faculty of Informatics, Department of Pattern Recognition (Informatics 5), Erlangen, Germany; Visiting Professor, September - December 1996, supported by the DAAD.
- Bogazici University, Department of Electrical and Electronic Engineering, Istanbul, Turkey; Visiting Professor, March - August 1997, supported by TUBITAK.
- The University of Iowa, College of Medicine, Department of Radiology, Iowa City, Iowa; Visiting Associate, September 1997 – August 1998.
- The University of Medicine and Dentistry of New Jersey, School of Health Related Professions, Department of Health Informatics, Newark, New Jersey; Associate Professor, September 1998 – August 1999.
- Saint Louis University, Parks College of Engineering and Aviation, Department of Computer Science, St. Louis, Missouri; Associate Professor, August 1999 – June 2006.
- Middle East Technical University, College of Science, Northern Cyprus Campus (METU NCC), Northern Cyprus; Associate Professor, Fall semester, August 2006 – February 2007.
- Wroclaw University of Technology, Faculty of Electronics, Department of Systems and Computer Networks, Wroclaw, Poland; Visiting Professor, Fall semester, September 2008 – February 2009, supported by the European Union.
- Prince Mohammad Bin Fahd University, College of Engineering and Science, Department of Computer Science, Al Khobar, Kingdom of Saudi Arabia; Associate Professor, September 2009 – September 2010.
- A'sharqiyah University, College of Applied Sciences, Ibra, Sultanate of Oman; Professor, January 2012 – June 2012.
- University of North Florida, School of Computing, Jacksonville, Florida; Visiting Professor, August 2013 – May 2014.

## **VII. Areas of Research Interest**

Information and Communication Technology and Applications including Pattern Recognition and Classification, Machine Learning, Data Mining, Knowledge Discovery, Computer Vision, Neural Networks, Computer Security, Medical Informatics.

### **VIII. Masters' and PhD Students' Theses Advisor**

- Master thesis advisor of 11 students, University of Medicine and Dentistry of New Jersey, Newark, NJ, academic year 1998/1999.
- Master thesis advisor of 16 students, Saint Louis University, Saint Louis, MO, academic years 1999 – 2006.
- PhD thesis advisor of Petia Radeva, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences; academic years 1992 – 1995. She defended her PhD thesis in 1997 at the Autonomous University of Barcelona, Spain, where she is affiliated now as a Professor at the Computer Vision Centre.
- Thesis advisor of research projects of 10 PhD students, Wroclaw University of Technology, Wroclaw, Poland; academic year 2008/2009.

### **IX. Courses Taught for Undergraduate Students**

#### **Saint Louis University, Parks College of Engineering and Aviation, Department of Computer Science, Saint Louis, Missouri:**

- Introduction to Computer Sciences with C++ – 3 credits, academic years 1999/2006.
- Numerical Analysis – 3 credits, academic years 1999/2006.
- Artificial Intelligence – 3 credits, academic years 1999/2006.
- Elements of Discrete Structures - 2 credits, academic years 1999/2006.
- Elements of Discrete Structures - 3 credits, academic years 1999/2006.
- Advanced Discrete Structures - 3 credits, Spring semester 2000.
- Computational Linear Algebra – 3 credits, academic years 1999/2006.
- Combinatorial Algorithms - 3 credits, Spring semester 2000.
- Introduction to Computer Programming with Fortran 90 - 3 credits, Spring semester 2001.
- Discrete Probability and Statistics – 3 credits, Spring semester 2005.
- Discrete Mathematics – 3 credits, Fall semester 2005.
- Scientific Programming with Matlab and C++ – 3 credits, Fall semester 2005, Spring semester 2006.

#### **Middle East Technical University (METU), Northern Cyprus Campus, College of Science, Cyprus:**

- Calculus – 4 credits, Fall semester 2006.
- Discrete Computational Structures – 3 credits, Fall semester 2006.
- Algorithms and Complexity - 3 credits, Fall semester 2006.

#### **Prince Mohammad Bin Fahd University (PMU), College of Engineering and Science, Al Khobar, Kingdom of Saudi Arabia:**

- Discrete Structures - 3 credits, Fall semester 2009, Spring semester 2010 (two sections).
- Algorithms - 3 credits, Fall semester 2009, Spring semester 2010.
- Professional Ethics - 2 credits, Fall semester 2009, Summer semester 2010.
- Enterprise Resources Planning Systems - 3 credits, Fall semester 2009.

- Linear Algebra – 3 credits, Spring semester 2010.
- Artificial Intelligence – 3 credits, Summer semester 2010.

**A'Sharqiyah University, College of Applied Sciences, Ibra, Sultanate of Oman:**

- Precalculus – 3 credits, Spring semester 2012.
- Statistics – 3 credits, Spring semester 2012.
- Applied Mathematics – 3 credits, Spring semester 2012.

**University of North Florida, School of Computing, Jacksonville, Florida:**

- Computer Science I – 3 credits, Fall semester 2013 (three sections).
- Introduction to Computer Logic – 4 credits, Fall semester 2013.
- Computer Science I – 3 credits, Spring semester 2014 (two sections).
- Digital Image Processing – 3 credits, Spring semester 2014.
- Computational Structures – 3 credits, Spring semester 2014.

**X. Courses Taught for Graduate Students**

**The University of Iowa, College of Medicine, Department of Radiology, Iowa City, Iowa:**

- Medical Informatics and Networking. Lectures for graduate and PhD students, The University of Iowa, College of Medicine, Department of Radiology, Iowa City, Iowa, USA, Spring semester 1998; <http://everest.radiology.uiowa.edu/courses/classS98>

**University of Medicine and Dentistry of New Jersey, School of Health Related Professions, Newark, New Jersey:**

- Biomedical Modeling and Decision Making Systems – 3 credits, Fall semester 1998.
- Medical Image Processing and Visualization – 3 credits, Fall semester 1998.
- Visualization in Biomedical Sciences – 3 credits, Spring semester 1999.
- Clinical Problem Solving and Decision Making – 3 credits, Spring semester 1999.
- Essentials of Health Computer Science – 4 credits, interactive online distance course, Spring and Summer semesters 1999.

**University of North Florida, School of Computing, Jacksonville, Florida:**

- Digital Image Processing – 3 credits, Spring semester 2014.

**XI. Courses Taught for PhD Students**

**Silesian Technical University, Gliwice, Poland:**

- Mathematical Models for Pattern Recognition. Course for PhD students, Silesian Technical University, Department of Automatic Control, Gliwice, Poland, Fall semester 1996.

**The University of Iowa, College of Medicine, Department of Radiology, Iowa City, Iowa:**

- Medical Informatics and Networking, Spring semester 1998.

**Wroclaw University of Technology, Wroclaw, Poland:**

- Artificial Intelligence – 3 credits, Fall semester 2008.
- Combinatorial Algorithms - 3 credits, Fall semester 2008;  
<http://edu.kssk.pwr.wroc.pl/>

## **XII. Invited Lectures Given at Congresses, Colloquia and Seminars**

- Department of Signal, Image and Speech Processing, University of Surrey, Guildford, United Kingdom, June 2001. Title: “Pattern recognition and combining classifiers”.
- Department of Informatics, Aristotle’s University of Thessaloniki, Thessaloniki, Greece, June 2001. Title: “Virtual reality techniques in medicine”.
- Institute of Biomedical Engineering, Porto University, Porto, Portugal, June 2002. Title: “Virtual reality in medicine”.
- Department of Electrical and Electronic Engineering, Bogazici University, Istanbul, Turkey, July 2004. Title: “Techniques of CT colonography”.
- Department of Electrical and Electronic Engineering, Bogazici University, Istanbul, Turkey, July 2004. Title: “Supervised pattern recognition and combining classifiers”.
- Indiana University School of Informatics at IUPUI, Indianapolis, Indiana, April 2005. Title: “From features to predicates in supervised pattern recognition”.
- Department of Computer Science, Florida Southern College, Lakeland, Florida, May 2006. Title: “Mathematical methods for pattern recognition and applications”.
- Department of Computer Science, Morehouse College, Atlanta, Georgia, May 2006. Title: “Supervised pattern recognition and applications”.
- Department of Computer Science, University of Maryland, Eastern Shore, Princess Anne, Maryland, May 2006. Title: “Pattern recognition methods and combining classifiers”.
- Department of Science, Middle East Technical University (METU), Northern Cyprus Campus, Cyprus, January 2007. Title: “Computer vision techniques”.
- Faculty of Electronics, Wroclaw University of Technology, Wroclaw, Poland, June 2, 2008. Title: “Supervised pattern recognition problems by Non-Reducible Descriptors”.
- Faculty of Electronics, Wroclaw University of Technology, Wroclaw, Poland, June 3, 2008. Title: “Multidimensional pattern recognition problems and combining classifiers”.
- Faculty of Electronics, Wroclaw University of Technology, Wroclaw, Poland, June 4, 2008. Title: “Virtual colonoscopy”.
- Department of Cognitive Systems, Faculty of Informatics, Technical University of Karlsruhe, Karlsruhe, Germany, June 9, 2008. Title: “Multidimensional pattern recognition problems and combining classifiers”.
- Department of Measurement and Control, Karlsruhe Institute of Technology, Technical University of Karlsruhe, Karlsruhe, Germany, June 19, 2008. Title: “Multidimensional pattern recognition problems and combining classifiers”.
- Department of Pattern Recognition (Informatic 5), Faculty of Informatics, Friedrich-Alexander University Erlangen-Nuremberg, Erlangen, Germany, June 27, 2008. Title: “Multidimensional pattern recognition problems and combining classifiers”.
- Department of Information Technology, Academy of Humanities and Economics in Lodz, Lodz, Poland, January 19, 2009. Title: “Virtual colonoscopy”.
- Bahcesehir University, Workshop on Pattern Analysis and Recognition, Istanbul, Turkey, July 5, 2011, Title: “Machine learning of syndromes for different types of features”.
- Autonomous University of Barcelona, Computer Vision Center, Barcelona, Spain, July 2, 2012, Title: “Virtual reality in medicine”.
- International Conference on Pattern Recognition Applications and Techniques (ICPRAT) 2013, 1–2 March 2013, Chennai, India, Invited talk, Title: “From features to predicates or from symptoms to syndromes in supervised pattern recognition”.

- Meenakshi College for Women, Department of Computer Science, Chennai, India, March 4, 2013, Title: “Introduction to Artificial Intelligence”.
- Meenakshi College for Women, Meenakshi Sundararajan Engineering College, Chennai, India, March 5, 2013, Title: “How to do research in science – methodological aspects”.
- Department of Computer Science and Software Engineering, Concordia University, Montreal, Canada, May 15, 2013, Title: “From features to predicates or from symptoms to syndromes in supervised pattern recognition”;
- Joint Math/Computer Science Colloquium, University of North Florida, Jacksonville, Florida, November 14, 2013, Title: “From features to predicates or from symptoms to syndromes in supervised pattern recognition”.
- College of Computing, Engineering and Construction Research Colloquium Series 2013-2014 – Theme: Interdisciplinary Research, University of North Florida, Jacksonville, Florida, February 28, 2014, Title: “From features to non-reducible descriptors in supervised pattern recognition problems”.
- 4<sup>th</sup> International Teleconference on Informational Modeling, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, Sofia, Bulgaria, December 18, 2014, Title: “From binary features to non-reducible descriptors in supervised pattern recognition problems”.
- University of Maryland University College, Graduate School, Largo, Maryland, June 2<sup>nd</sup> 2015, Title: “Cloud computing”.
- Bridgewater College, Department of Mathematics and Computer Science, Bridgewater, Virginia, June 3<sup>rd</sup>, 2015, Title: “From features to non-reducible descriptors in supervised pattern recognition problems”.
- Friedrich-Alexander University Erlangen-Nuremberg, Faculty of Informatics, Department of Pattern Recognition (Informatics 5), Erlangen, Germany, July 9<sup>th</sup>, 2015, Title: “Virtual colonoscopy (Techniques of CT Colonography)”.
- BIT’s First World Congress of Robotics 2015 (WCR-2015), Shenyang, China, August 31<sup>st</sup> – September 2<sup>nd</sup>, 2015, Invited talk: “Learning visual descriptors for pattern recognition”; <http://www.bitcongress.com/WCR2015/>
- Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, Department of Informatics Modelling, Sofia, Bulgaria, December 2<sup>nd</sup>, 2015, Title: “Your family: past, present, and future”.
- 10<sup>th</sup> Mexican Conference on Pattern Recognition, Puebla, Mexico, June 27 – June 30, 2018, “From features to non-reducible descriptors in supervised pattern recognition problem”; <https://ccc.inaoep.mx/~mcp2018/speakers.html>

### **XIII. Member of the Advisory Board of Journals**

*International Journal of Machine GRAPHICS & VISION* since 1996;  
<http://bluebox.ippt.pan.pl/~zkulpa/MGV/#board>;  
<http://www.ipipan.waw.pl/MGV/MGV.html>

**Guest Editor** on the *Special Issue on Progressive Multimedia Technology Towards a New Generation of Learning Systems, Multimedia Tools and Applications* - Springer, 2015;  
<http://www.springer.com/computer/information+systems+and+applications/journal/11042>

### **XIV. Author and/or Reviewer for the Following Journals**

*Pattern Recognition; Pattern Recognition Letters; Journal of Machine GRAPHICS & VISION; Pattern Recognition and Image Analysis: Advances in Mathematical Theory and Applications; Critical Reviews in Biomedical Engineering; Springer Series on Lecture Notes in Computer Science (LNCS); IEEE Transactions on Medical Imaging; Academic Radiology; Medical Physics;*

X-ray Science and Technology; Informatica; IEEE Transactions on Biomedical Engineering; International Journal of Pattern Recognition and Artificial Intelligence; International Journal of Applied Mathematics and Computer Science (AMCS); Concurrency and Computation: Practice and Experience; Journal of Supercomputing; Pattern Analysis and Applications; SIAM Journal on Optimization; Scientific Journals International; Intelligent Data Analysis; Computer Methods and Programs in Biomedicine

#### **XV. Program Committee Member of International Conferences**

- 4th International Conference on Computer Vision, Pattern Recognition and Image Processing, CVPRIP'2002; Mar. 8 - 12, 2002, Durham, North Carolina, <http://www.ee.duke.edu/JCIS/>.
- 12th Portuguese Conference on Pattern Recognition, RECPAD 2002, Porto, Portugal, June 28-30, 2002; <http://ineb.fe.up.pt/recpad2002/>
- International Conference on Computer Vision & Graphics, ICCVG 2002, Zakopane, Poland, September 25-29 '2002; <http://www.zts.ia.polsl.gliwice.pl/iccvg/>
- 6th Symposium on Neural Network Applications in Electrical Engineering, NEUREL - 2002, Belgrade, Yugoslavia, 26 – 28 September 2002; <http://galeb.etf.bg.ac.yu/~neurel/>
- The 2003 IEEE International Conference on Information Reuse and Integration, IRI-2003, October 27-29, 2003, Las Vegas, Nevada; <http://parks.slu.edu/IRI2003/>
- 5th International Conference on Computer Vision, Pattern Recognition and Image Processing, CVPRIP 2003, September 26-30, 2003, Research Triangle Park, North Carolina; <http://www.cs.usu.edu/cheng/CVPRIP2003/>
- 8th Iberoamerican Congress on Pattern Recognition, CIARP'2003, Havana, Cuba, November 26-29, 2003; <http://cimaf2003.iespana.es/text%B4s/ciarp2003/>
- 7th Symposium on Neural Network Applications in Electrical Engineering, NEUREL 2004, Belgrad, September 23 - 25, 2004, Serbia; <http://neurel.etf.bg.ac.yu/~neurel/>
- International Conference of Computer Graphics and Vision, ICCVG 2004, Warsaw, Poland, September 22 - 24, 2004; <http://atena.polsl.pl/iccvg>
- The 2004 IEEE International Conference on Information Reuse and Integration, IRI 2004, November 8-10, 2004, Las Vegas, Nevada; <http://www.cs.fiu.edu/IRI04/>
- 9th Iberoamerican Congress on Pattern Recognition, CIARP'2004, Puebla, Mexico, October 26-29, 2004; <http://ccc.inaoep.mx/CIARP2004/>
- Fourth International Conference on Computer Recognition Systems, CORES'2005, Rydzyna, Poland, May 22-25, 2005; <http://cores.pwr.wroc.pl/>
- 10th Iberoamerican Congress on Pattern Recognition, CIARP'2005, Havana, Cuba, November 15-18, 2005; <http://xciarp.cenatav.co.cu/>
- 6th International Conference on Computer Vision, Pattern Recognition and Image Processing, CVPRIP'2005, July 21-26, 2005, Salt Lake City, Utah; <http://www.jcis.org/>
- 8th Symposium on Neural Network Applications in Electrical Engineering, NEUREL 2006, Belgrad, Serbia, September 25 - 27, 2006; <http://neurel.etf.bg.ac.yu/~neurel/>
- World Congress on Engineering & Computer Science 2007, San Francisco, USA, 24 - 26 October 2007; <http://www.iaeng.org/WCECS2007/>
- International Conference on Soft Computing and Applications, ICSCA'07, San Francisco, 24 - 26 October, 2007; <http://www.iaeng.com/WCECS2007/ICSCA2007>
- International Conference on Signal Processing and Imaging Engineering, ICSPIE'07, San Francisco, 24 - 26 October, 2007; <http://www.iaeng.com/WCECS2007/ICSPIE2007>
- Fifth International Conference on Computer Recognition Systems, CORES'07, 22 - 25 October 2007, Wroclaw, Poland; <http://cores.pwr.wroc.pl/>
- 12th Iberoamerican Congress on Pattern Recognition, CIARP'2007, Vina Del Mar, Valparaiso, Chile, November 13 - 16, 2007; <http://www.ciarp.org/>

- The 2008 High Performance Computing & Simulation Conference, HPCS 2008, Nicosia, Cyprus, June 3 - 6, 2008; <http://cisedu.us/cis/hpcs/08/>
- 13th Iberoamerican Congress on Pattern Recognition, Havana, Cuba, September 9 – 12, 2008; <http://www.ciarp.org/>
- 9th Symposium on Neural Network Applications in Electrical Engineering, NEUREL 2008, Belgrad, September 25 - 27, 2008, Serbia; <http://neurel.etf.bg.ac.yu/>
- Fifth IEEE International Conference on Soft Computing as Transdisciplinary Science and Technology, CSTST'08, 26 - 30 October, 2008, Cergy-Pontoise, Paris, France; <http://cstst.insa-lyon.fr/>
- World Congress on Engineering & Computer Science 2008, San Francisco, USA, 22 - 24 October 2008; <http://www.iaeng.org/WCECS2008/>
- Sixth International Conference on Computer Recognition Systems, CORES'09, 25 - 28 May 2009, Jelenia Gora, Poland; <http://cores.pwr.wroc.pl/index.php>
- International Conference on Management of Emergent Digital EcoSystems, MEDES'09, INSA de Lyon, Lyon, France, October 27 - 30, 2009; <http://sigappfr.acm.org/MEDES>
- World Congress on Engineering & Computer Science 2009, San Francisco, USA, 20 - 22 October 2009; <http://www.iaeng.org/WCECS2009/>
- International Symposium Understanding Intelligent and Complex Systems, Petru Maior University, Targu Mures, Romania, 22 - 23 October 2009; <http://uics.upm.ro/>
- 14th Iberoamerican Congress on Pattern Recognition, CIARP2009, Guadalajara, Mexico, 15 - 18 November, 2009; <http://www.ciarp.org/xiv/>
- 1st Mexican Workshop on Pattern Recognition, MWPR2009, Guadalajara, Mexico, 14 November, 2009; <http://ccc.inaoep.mx/~mwpr2009/>
- International Conference on Information Systems and Software Engineering, Chennai, Tamil Nadu, India, 28 – 30 December 2009; <http://www.icisse.org/>
- 11th International Conference on Computing, CORE 2010. Mexico City, Mexico, May 26 - 28, 2010; <http://www.cic.ipn.mx/core>
- The 2010 High Performance Computing & Simulation Conference, HPCS 2010, June 28 - July 2, 2010, Caen, France; <http://cisedu.us/rp/hpcs10>
- The 2010 World Congress in Computer Science, Computer Engineering, and Applied Computing, July 12-15, 2010, Las Vegas, Nevada; <http://www.world-academy-of-science.org>
- Joint IAPR International Workshops on Structural and Syntactic Pattern Recognition, SSPR 2010, and Statistical Techniques in Pattern Recognition, SPR 2010, Cesme, Izmir, Turkey, August 18-20, 2010; <http://www.rvg.ua.es/ssspr2010/>
- 20th International Conference on Pattern Recognition, ICPR 2010, Istanbul, Turkey, August 23 – 26, 2010; <http://www.icpr2010.org/>
- International Conference of Computer Vision and Graphics, ICCVG 2010, Warsaw, Poland, September 20 - 22, 2010; <http://www.iccv2010.pjwstk.edu.pl>; <http://www.tpo.org.pl/iccv2010>
- 10th Symposium on Neural Network Applications in Electrical Engineering, NEUREL 2010, Belgrade, Serbia, September 23 - 25, 2010; <http://neurel.etf.rs/>
- World Congress on Engineering & Computer Science 2010, WCECS'10, San Francisco, USA, 19 - 21 October 2010; <http://www.iaeng.org/WCECS2010/>
- Second Mexican Conference on Pattern Recognition, MCPR 2010, Puebla City, Mexico, September 27 – 29, 2010; <http://ccc.inaoep.mx/~mcpr2010/>
- 15th Iberoamerican Congress on Pattern Recognition, CIARP 2010, Sao Paulo, Brazil, November 8 - 11, 2010; <http://www.ciarp.org/xv/>
- 2010 International Conference on Information Technology & Business Intelligence, ITBI-10, Nagpur, India, November 12 - 14, 2010; <http://imtagnpur.ac.in/itbi10/>
- 9th IEEE International Conference on Machine Learning and Applications, ICMLA 2010, Washington D.C., 12-14 December 2010; <http://www.icmla-conference.org/icmla10/>

- The Second Symposium on Business Informatics in Central and Eastern Europe (CEE - Symposium 2011), 28-30 April 2011, Cluj-Napoca, Romania; <http://www.econ.ubbcluj.ro/sbicee2011>
- The Third Mexican Conference on Pattern Recognition, MCPR2011, June 29 – July 2 2011, Cancun, Mexico; <http://ccc.inaoep.mx/~mcpr2011/>
- The 2011 High Performance Computing & Simulation Conference, HPCS 2011, July 4 - 8, 2011, Istanbul, Turkey; <http://cisedu.us/rp/hpcs11>
- The 2011 International Conference of Computational Intelligence and Intelligent Systems, ICCIIS 2011, London, U.K. 6-8 July, 2011; <http://www.iaeng.org/WCE2011/ICCIIS2011.html>;
- 3rd Malaysian Joint Conference on Artificial Intelligence, MJCAI 2011, Artificial Intelligence: From Information to Intelligence. UNITEN Patrajaya Campus, Malaysia, 20-22 July 2011; <http://www.mimos.my/mjcai2011/>
- International Workshop on Next Generation Intelligent Medical Decision Support Systems MedDecSup 2011, September 18-19, 2011, Targu Mures, Romania; <http://ncscs.upm.ro/>
- World Congress on Engineering & Computer Science 2011, WCECS'11, San Francisco, USA, 19-21 October 2011; <http://www.iaeng.org/WCECS2011/>
- The 2011 IEEE International Conference on Intelligent Robotics, Automations and Applications, IROA-11, Gwangju, Korea, October 20-22, 2011; <http://www.ftrai.org/iroa2011>
- 10th IEEE International Conference on Machine Learning and Applications, ICMLA 2011, Honolulu, Hawaii, 18-21 December 2011; <http://www.icmla-conference.org/icmla11/>
- The International Conference on Informatics & Applications, ICIA2012, Kuala Terengganu, Malaysia, June 3-5, 2012; [www.sdiwc.net/conferences/2012/icia2012](http://www.sdiwc.net/conferences/2012/icia2012)
- Fourth Mexican Conference on Pattern Recognition, MCPR2012, Huatulco, Mexico, June 27–30, 2012; <http://ccc.inaoep.mx/~mcpr2012/>
- The 2012 International Conference on High Performance Computing & Simulation Conference HPCS 2012, July 2 - 6, 2012, Madrid, Spain; <http://hpcs2012.cisedu.info>; <http://cisedu.us/rp/hpcs12>
- 17th Iberoamerican Congress on Pattern Recognition, CIARP 2012, Buenos Aires, Argentina, September 3 – 6, 2012; <http://www.ciarp.org>
- 12th Pacific Rim International Conference on Artificial Intelligence, PRICAI 2012, Kuching, Sarawak, Malaysia, September 3–7, 2012; <http://ktw.mimos.my/pricai2012/>
- 11th Symposium on Neural Network Applications in Electrical Engineering, NEUREL 2012, Belgrade, Serbia, September 20 - 22, 2012; <http://neurel.etf.rs/>; <http://www.etf.rs>
- International Conference of Computer Vision and Graphics, ICCVG 2012, Warsaw, Poland, September 24 - 26, 2012; <http://www.iccv.g.pjwstk.edu.pl>; <http://www.tpo.org.pl/iccv2012>
- World Congress on Engineering & Computer Science 2012, WCECS'12, San Francisco, USA, 24-26 October 2012; <http://www.iaeng.org/WCECS2012/>
- Joint IAPR International Workshops on Structural and Syntactic Pattern Recognition, SSPR 2012, and Statistical Techniques in Pattern Recognition, SPR 2012, November 7-9, 2012, Hiroshima, Japan; <http://www.media.imit.chiba-u.jp/ssspr2012/>
- 21th International Conference on Pattern Recognition, ICPR 2012, Track III Pattern Recognition and Applications, November 11-15, 2012, Tsukuba Science City, Japan; <http://www.icpr2012.org/>
- The 2012 FTRA International Symposium on Advances in Cryptography, Security and Applications for Future Computing, ACSA-12, Jeju, Korea, November 22-25, 2012; <http://www.ftrai.org/wcc2012/acsa>
- The 12th International Conference on Machine Learning and Applications, ICMLA 2012, Boca Raton, Florida, 12-15 December 2012, Senior Committee Member; <http://www.icmla-conference.org/icmla12/>
- International Conference on Computer Science, MIC-CS'13, Kuala Lumpur, Malaysia, March 29-31, 2013; <http://www.masaumnet.com/miccs13/index.html>

- Polish – British Workshop 2013, PBW 2013, Srebrna Góra, Poland, June 6-9, 2013; <http://pbw.kssk.pwr.wroc.pl/>
- The 5th Mexican Conference on Pattern Recognition, MCPR2013, Queretaro, Mexico, 26-29 June 2013; <http://www.mcpr.org.mx/mcpr/>
- The 2013 International Conference on High Performance Computing & Simulation Conference HPCS 2013, July 1 - 5, 2013, Helsinki, Finland; <http://hpcs2013.cisedu.info>; <http://cisedu.us/rp/hpcs13>
- The 2013 International Conference of Computational Intelligence and Intelligent Systems, London, U.K., 3-5 July, 2013; <http://www.iaeng.org/WCE2013/ICCIIS2013.html>
- International Workshop on Intelligent Pattern Recognition and Applications, WIPRA 2013, New York, USA, July 15, 2013; [http://www.mldm.de/w\\_pattern\\_recognition.php](http://www.mldm.de/w_pattern_recognition.php)
- The 4th Malaysian Joint Conference on Artificial Intelligence, MJCAI 2013, Kota Kinabalu, Sabah, Malaysia, July 24–26, 2013; <http://ktw.mimos.my/mjcai2013/>
- World Congress on Engineering & Computer Science 2013, WCECS'13, San Francisco, USA, 23-25 October 2013; <http://www.iaeng.org/WCECS2013/>
- Second International Conference on Mathematics of Informational Modeling, December 17-19, 2013, Video-tele-conference moderated from Sofia, Kyiv and Erevan; [www.ithea.org](http://www.ithea.org)
- 18th Iberoamerican Congress on Pattern Recognition, CIARP 2013, Habana, Cuba, November 20–23, 2013; <http://www.ciarp.org>
- 12th IEEE International Conference on Machine Learning and Applications, ICMLA 2013, Miami, Florida, USA, December 4–7, 2013; <http://www.icmla-conference.org/icmla13>
- The 5th FTRA International Conference on Computer Science and its Applications, CSA-13, Danang, Vietnam, December 18–21, 2013; <http://www.ftrai.org/csa2013>
- The FTRA 2013 International Symposium on Ubiquitous Computing and Embedded Systems, UCES-13, Danang, Vietnam, December 18 - 21, 2013; <http://www.ftrai.org/workshop/uces2013>
- The First International Conference on Data Engineering, DaEng-2013, Kuala Lumpur, Malaysia, December 16–18, 2013; <http://amcs.co/daeng2013>
- The 2014 International Symposium on Information and Communication Technology, ICT 2014, Zhangjiajie, China, May 28-31, 2014; <http://www.ftrai.org/3doc2013/>
- The 2014 International Conference on High Performance Computing & Simulation Conference HPCS 2014, July 21 - 25, 2014, Bologna, Italy; <http://hpcs2014.cisedu.info>; <http://cisedu.us/rp/hpcs14>
- The Sixth Mexican Conference on Pattern Recognition, MCPR2014, Cancun, Mexico, June 25-28, 2014; <http://ccc.inaoep.mx/~mcpr2014>
- The 2014 International Conference of Computational Intelligence and Intelligent Systems, London, U.K., 2-4 July 2014; <http://www.iaeng.org/WCE2014/ICCIIS2014.html>
- GS Multi-Conference on Sciences and Technology 2014, August 01-03, 2014, Dubai, UAE; <http://gspublishers.com/conferences/gsmicst14/>
- 22nd International Conference on Pattern Recognition, ICPR 2014, Track Pattern Recognition and Machine Learning, 24-28 August 2014, Stockholm, Sweden; <http://www.icpr2014.org/>
- 6th ICT Innovation Conference; <http://ict-act.org/>; 9-12 September, 2014, Ohrid, Republic of Macedonia; Workshop on Machine Learning in Life Sciences; <http://ict-act.org/workshop-machine-learning-life-sciences>
- International Conference on Computer Vision and Graphics, ICCVG 2014, September 15-17, 2014, Warsaw, Poland; <http://iccvq.wzim.sggw.pl/>
- World Congress on Engineering & Computer Science 2014, WCECS'14, San Francisco, USA, 22-24 October 2014; <http://www.iaeng.org/WCECS2014/>

- 19th Iberoamerican Congress on Pattern Recognition, CIARP 2014, Puerto Vallarta, Mexico, November 2–5, 2014; <http://www.ciarp.org/xix/index.html>
- 12th Symposium on Neural Network Applications, NEUREL 2014, Belgrade, Serbia, November 25 - 27, 2014; <http://neurel.etf.rs/>; <http://www.etf.rs>
- 13th Pacific Rim International Conference on Artificial Intelligence, PRICAI 2014, Gold Coast, Australia, December 1-5, 2014; <http://www.pricai2014.org>
- The 6th FTRA International Conference on Computer Science and its Applications, CSA-14, Guam, USA, December 17-20, 2014; <http://www.ftrai.org/csa2014/>
- The 2015 World Congress on Information Technology Applications and Services, ACS-15, "Advanced Mobile, Communications, Security, Multimedia, Vehicular, Cloud, IoT, and Computing", February 24-26, 2015, Jeju, Korea; <http://www.worlditcongress.org/2015jeju>
- The 2015 International Symposium on Advances in Computing, Communications, Security, and Applications for Future Computing, ACSA 2015, February 24-26, 2015, Jeju, Korea; <http://www.acsa-conference.org/2015jeju>
- The Seventh Mexican Conference on Pattern Recognition, MCPR2015, Mexico City, Mexico, June 22-26, 2015; <http://ccc.inaoep.mx/~mcpr2015>
- The 2015 International Conference of Computational Intelligence and Intelligent Systems, WCE 2015, London, U.K., 1-3 July, 2015; <http://www.iaeng.org/WCE2015/ICCIIS2015.html>
- The 4th International Conference on Ubiquitous Computing Application and Wireless Sensor Network,UCAWSN-15, July 8-10, 2015, Jeju, Korea; <http://ucawsn-conference.org/2015/>
- The 2015 International Conference on High Performance Computing & Simulation Conference, HPCS 2015, July 20 - 24, 2015, Amsterdam, the Netherlands; <http://hpcs2015.cisedu.info>; <http://cisedu.us/rp/hpcs15>
- 10<sup>th</sup> International Conference on Multimedia & Network Information Systems, MISSI'15, September 17 – 19, 2015, Wroclaw, Poland; [http://missi.pwr.wroc.pl/prog\\_com.php](http://missi.pwr.wroc.pl/prog_com.php)
- 7th International Conference on Computational Collective Intelligence Technologies and Applications, ICCCI'15, September 21-23, 2015, Madrid, Spain; <http://antares.sip.ucm.es/iccci2015/index.php>
- World Congress on Engineering & Computer Science 2015, WCECS'15, San Francisco, USA, 21-23 October 2015; <http://www.iaeng.org/WCECS2015/>
- 7th International Conference on Computer Science and its Applications, CSA-15, Bangkok, Thailand, December 16-18, 2015; <http://csa-conference.org/2015/>
- International Conference on Management Science and Engineering, MSE 2015, Chengdu, Sichuan, China, December 25-27,2015; <http://www.mse-2015.org/>
- The Eighth Mexican Conference on Pattern Recognition, MCPR2016, Guanajuato, Mexico, June 22-25, 2016; <http://ccc.inaoep.mx/~mcpr2016>
- The 2016 International Conference of Computational Intelligence and Intelligent Systems, ICCIIS2016 as a part of the World Congress on Engineering 2016 , WCE2016, London, U.K., June 29–July 1, 2016; <http://www.iaeng.org/WCE2016/ICCIIS2016.html>
- 14th Pacific Rim International Conference on Artificial Intelligence, PRICAI 2016, Phuket, Thailand, August 22-26, 2016; <http://www.pricai2016.org>
- Third European Network Intelligence Conference, ENIC 2016, September 5-7, 2016, Wroclaw, Poland; <http://enic.pwr.edu.pl/>
- Workshop on Applications of Machine Learning, AML 2016, as a part of the 19th International Conference on Systems Science, ICSS 2016, organized by Wroclaw University of Technology, Wroclaw, Poland, September 7-9, 2016; <http://www.icss.pwr.edu.pl/aml/aml.html>
- International Conference on Computer Vision and Graphics ICCVG 2016, September 19-21, 2016, Warsaw, Poland; <http://iccvq.wzim.sggw.pl/>
- 8th International Conference on Computational Collective Intelligence, ICCCI 2016, Halkidiki, Greece, September 28-30, 2016; <http://conferences.cwa.gr/iccci2016/>

- World Congress on Engineering & Computer Science 2016, WCECS'16, San Francisco, USA, 19-21 October 2016; <http://www.iaeng.org/WCECS2016/>
- 13th Symposium on Neural Network Applications, NEUREL 2016, Belgrade, Serbia, November 22 - 24, 2016; <http://neurel.etf.rs/>; <http://www.etf.rs>
- 23rd International Conference on Pattern Recognition, ICPR 2016, Track 2: Computer Vision and Robot Vision, Cancun, Mexico, 4-8 December 2016; <http://www.icpr2016.org/site/>
- 15th IEEE International Conference on Machine Learning and Applications, ICMLA 2016, Los Angeles, California, USA, December 18–20, 2016; <http://www.icmla-conference.org/icmla16/>
- 6th International Conference on Pattern Recognition Applications and Methods, ICPRAM 2017, February 24 - 26, 2017, Porto, Portugal; <http://www.icpram.org/>
- 9th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2017), Special Session on Intelligent Computer Vision Systems and Applications, Kanazawa, Japan, April 3-5, 2017; [https://aciids.pwr.edu.pl/2017/download/ACIIDS\\_2017\\_Special\\_Session\\_\(ICVSA\\_2017\)\\_CFP\\_v.2.0.pdf](https://aciids.pwr.edu.pl/2017/download/ACIIDS_2017_Special_Session_(ICVSA_2017)_CFP_v.2.0.pdf)
- The Nine Mexican Conference on Pattern Recognition, MCPR2017, Huatulco, Mexico, June 21- 24, 2017; <http://ccc.inaoep.mx/~mcpr2017>
- The 9th International Conference on Computational Collective Intelligence, ICCCI 2017, Nicosia, Cyprus, September 27-29, 2017: <http://cyprusconferences.org/iccci2017>
- The 10th Mexican Conference on Pattern Recognition, MCPR2018, Poebla, Mexico, June 27-30, 2018; <http://www.mcpr.org.mx>
- The Department of Information Technology of Meenakshi Sundararajan Engineering College is conducting its International Conference on February 2018 titled
- Co-chair of the Conference Committee of the International Conference on Machine Learning and Data Analysis 2007, ICMLDA'07, Berkeley University, San Francisco, USA, 24 - 26 October 2007; <http://www.iaeng.org/WCECS2007/ICMLDA2007>
- Chair and Organizer of the Special Session on Pattern Analysis and Recognition, PAR'2008, Nicosia, Cyprus, June 3 - 6, 2008; <http://cisedu.us/cis/hpcs/08/>
- Co-chair of the Conference Committee of the International Conference on Machine Learning and Data Analysis 2008, ICMLDA'08, Berkeley University, San Francisco, USA, 22-24 October 2008; <http://www.iaeng.org/WCECS2008/ICMLDA2008>
- Program Chair and Organizer of the Special Session on Pattern Analysis and Recognition, PAR'2009. Leipzig, Germany, 21 – 24 June, 2009; <http://cisedu.us/cis/hpcs/09/>
- Co-chair of the Conference Committee of the International Conference on Machine Learning and Data Analysis 2009, ICMLDA'09, Berkeley University, San Francisco, USA, 20-22 October 2009; <http://www.iaeng.org/WCECS2009/ICMLDA2009>
- Chair and Organizer of the International Workshop on Pattern Analysis and Recognition, PAR'2010, Caen, Normandy, France, June 28 – July 2, 2010; <http://cisedu.us/cis/hpcs/10/main/callForPapers>
- Co-chair of the Conference Committee of the International Conference on Machine Learning and Data Analysis 2010, ICMLDA'10, Berkeley University, San Francisco, USA, 20-22 October 2010; <http://www.iaeng.org/WCECS2010/ICMLDA2010>
- Chair and Co-organizer of the International Workshop on Pattern Analysis and Recognition, PAR'2011, Istanbul, Turkey, July 4 - 8, 2011; <http://hpcs11.cisedu.info/>
- Co-chair of the Conference Committee of the International Conference on Machine Learning and Data Analysis 2011, ICMLDA'11, Berkeley University, San Francisco, USA, 19-21 October 2011; <http://www.iaeng.org/WCECS2011/ICMLDA2011>
- Chair and Co-organizer of the 3<sup>rd</sup> International Workshop on Machine Learning, Pattern Recognition and Applications, MLPRA'2012; Madrid, Spain, July 2–6, 2012; <http://hpcs2012.cisedu.info/>; <http://cisedu.us/rp/hpcs12>

- Co-chair of the Conference Committee of the International Conference on Machine Learning and Data Analysis 2012, ICMLDA'12, Berkeley University, San Francisco, USA, 24-26 October 2012; <http://www.iaeng.org/WCECS2012/ICMLDA2012>
- Member of the Advisory Committee of the 11th International Conference on Machine Learning and Applications, ICMLA 2012, Boca Raton, Florida, USA, December 12 – 15, 2012; <http://www.icmla-conference.org/icmla12/>
- Invited Talk, International Conference on Pattern Recognition Applications and Techniques (ICPRAT) 2013, Chennai, India, 1–2 March 2013; <http://icprat.meenakshicollege.com/>
- Chair and Co-organizer of the 4<sup>th</sup> International Workshop on Machine Learning, Pattern Recognition and Applications, MLPRA'2013; Helsinki, Finland, July 1–5, 2013; <http://hpcs2013.cisedu.info/>
- Member of the Program Committee of the thematic special issue “Supervised and Unsupervised Classification Techniques and their Applications”, Journal of Pattern Recognition Letters, 2013; <http://ees.elsevier.com/patrec/>
- Co-chair of the Conference Committee of the International Conference on Machine Learning and Data Analysis 2013, ICMLDA'13, Berkeley University, San Francisco, USA, 23-25 October 2013; <http://www.iaeng.org/WCECS2013/ICMLDA2013.html>
- Chair and Co-organizer of the 5<sup>th</sup> International Workshop on Machine Learning, Pattern Recognition and Applications, MLPRA'2014; Bologna, Italy, July 21–25, 2014; <http://hpcs2014.cisedu.info/>
- Organizing Committee Member of the 3<sup>rd</sup> International Conference & Exhibition on Biometrics & Biostatistics, July 14-16, 2014, Baltimore, USA; <http://www.omicsgroup.com/biometrics-biostatistics-conference-2014/committee.php>
- Co-chair of the Conference Committee of the International Conference on Machine Learning and Data Analysis 2014, ICMLDA'14, Berkeley University, San Francisco, USA, 22-24 October 2014; <http://www.iaeng.org/WCECS2014/ICMLDA2014.html>
- Member of the Reviewing Committee of the journal "2013 Special Issue on High Performance Computing and Simulation"; <http://www.cc-pe.net/journalinfo/>
- Member of the Reviewing Committee of the Special Issues of the International Journal of Pattern Recognition and Artificial Intelligence and the Journal Intelligent Data Analysis, 2014
- Chair and Co-organizer of the 6<sup>th</sup> International Workshop on Machine Learning, Pattern Recognition and Applications, MLPRA'2015; Amsterdam, the Netherlands, July 20–24, 2015; <http://hpcs2015.cisedu.info/>
- Co-chair of the Conference Committee of the International Conference on Machine Learning and Data Analysis 2015, ICMLDA'15, Berkeley University, San Francisco, USA, 21-23 October 2015; <http://www.iaeng.org/WCECS2015/ICMLDA2015.html>
- Member of the Reviewing Committee of the Special Issues of the Journal Intelligent Data Analysis, 2016
- Co-chair of the Conference Committee of the International Conference on Machine Learning and Data Analysis 2016, ICMLDA'16, Berkeley University, San Francisco, USA, 19-21 October 2016; <http://www.iaeng.org/WCECS2016/ICMLDA2016.html>
- Guest Editor of the Special Issue "Progressive multimedia technology for a new generation of learning system", Springer SBM US, 2016.
- 23<sup>rd</sup> International Conference on Pattern Recognition, 23<sup>rd</sup> ICPR, Cancun, Mexico, December 4-8, 2016; <http://www.icpr2016.org/>
- International Conference on Innovations in Information and Communication Technology (ICIICT), organizing by the Department of Information Technology of Meenakshi Sundararajan Engineering College, Chennai, India, February 2018.
- 10<sup>th</sup> Mexican Conference on Pattern Recognition, Puebla, Mexico, June 27 – June 30, 2018; <https://ccc.inaoep.mx/~mcpr2018/>

- Statistical + Structural and Syntactic Pattern Recognition Workshop (S+SSPR), Beijing, China, August 17 – 19, 2018; <http://ssspr2018.buaa.edu.cn/>
- 24<sup>th</sup> International Conference on Pattern Recognition (ICPR), Beijing, China, August 20<sup>th</sup> – 24<sup>th</sup>, 2018; <http://www.icpr2018.org/>
- Conference on Neural Network Applications, NEUREL 2018, Belgrade, Serbia, November 20 - 21, 2018; <http://neurel.etf.rs>; <http://www.etf.rs>
- 23rd Iberoamerican Congress on Pattern Recognition (CIARP), Madrid, Spain, November 19 - 22, 2018; <https://atvs.ii.uam.es/ciarp2018/>
- 10th International Conference on Computer Science and its Applications (CSA-18), Dec. 17 - 19, 2018, Kuala Lumpur, Malaysia; <http://csa-conference.org/2018/>
- 8<sup>th</sup> International Conference on Pattern Recognition Applications and Methods (ICPRAM), Prague, Czech Republic, February 19 – 21, 2019; <http://www.icpram.org/>
- 11<sup>th</sup> International Conference on Computer Recognition Systems (CORES'19), Polanica-Zdroj, Poland, May 20-22, 2019; <http://cores.pwr.edu.pl/>
- 11<sup>th</sup> Mexican Conference on Pattern Recognition, Queretaro, Mexico, June 26 – June 29, 2019; <http://www.mcpr18.com.mx/>
- 11<sup>th</sup> International Conference on Computer Science and its Applications, (CSA 2019), December 18 - 20, 2019, Macao, China; <http://csa-conference.org/2019>
- 9<sup>th</sup> Iberian Conference on Pattern Recognition and Image Analysis, Madrid, Spain. July 1-4, 2019; <http://www.ibpria.org/2019/>
- 24<sup>th</sup> Iberoamerican Congress on Pattern Recognition (CIARP 2019), Oct. 28-31, 2019, Havana, Cuba; <https://ciarp.uci.cu/>
- 18<sup>th</sup> IEEE International Conference on Machine Learning and Applications, (IEEE ICMLA'19), Boca Raton, Florida, USA, December 16-19, 2019; <https://www.icmla-conference.org/icmla19/index.php>
- 11<sup>th</sup> International Conference on Computer Science and its Applications, (CSA 2019), Dec. 18-20, 2019, Macao, China; <http://csa-conference.org/2019>
- 9<sup>th</sup> International Conference on Pattern Recognition Applications and Methods (ICPRAM), 22 – 24 February 2020, Valletta, Malta; <http://www.icpram.org/>
- Statistical + Structural and Syntactic Pattern Recognition Workshop (S+SSPR), September 8 – 11, 2020, Padua, Italy; <https://www.dais.unive.it/sspr2020/>
- 25<sup>th</sup> International Conference on Pattern Recognition (ICPR), Milan, Italy, September 13 – 18, 2020; <https://www.icpr2020.it>

## **XVII. Participation in Grants, Projects and Contracts**

- Principal Investigator in a joint project supported by the European Union, COST Ref.No.10239 entitled Innovative Computer-Aided Interpretation of Cadastral Maps. Participating countries: Germany, Slovakia and Bulgaria; 1993 – 1994.
- Investigator in the project NIH DK50184 entitled Gastrointestinal Tract Unraveling by Spiral Computer Tomograph, supported by the National Institutes of Health of USA, The University of Iowa, College of Medicine, Department of Radiology, Iowa City, Iowa; 1997 – 1998.
- Investigator in the project DTK 02/69 entitled Extraction of Business Rules from Source Code, supported by the National Fund Scientific Research of Republic of Bulgaria; 2010 – 2013.
- Reviewer and expert for the National Science Centre, Krakow, Poland, 2012.
- Reviewer and expert for the Seventh Research Framework Program of the European Union, since 2013.

## **XVIII. Selected publications**

1. V.Valev. On the representation of training tables in a k-valued code and the construction of empirical regularities. Proceedings of 9th International Conference on Pattern Recognition, 9th ICPR, Rome, Italy, November 14-17, 1988, IEEE Computer Society Press, 1988, Vol. II, pp. 779-781.
2. V.Valev, Yu.Zhuravlev. Integer-valued problems of transforming the training tables in k-valued code in pattern recognition problems. *Pattern Recognition*, 1991, Vol.24, No.4, pp. 283-288.
3. V.Valev, P.Radeva. Determining structural description by Boolean formulas. 2nd IAPR Int. Workshop on Structural and Syntactic Pattern Recognition (SSPR 1992), Bern, Switzerland, August 26-28, 1992. Published in the book *Advances in Structural and Syntactic Pattern Recognition*. H. Bunke, Ed. *Series in Machine Perception and Artificial Intelligence*, World Sci. Publ., Singapore, Vol.5, 1992, pp. 131-140.
4. V.Valev, P.Radeva. A method for solving pattern or image recognition problem by learning Boolean formulas. Proceedings of 11th International Conference on Pattern Recognition, 11th ICPR, The Hague, The Netherlands, August 30 - September 3, 1992, IEEE Computer Society Press, Vol.II, 1992, pp. 359-362.
5. V.Valev. The problem of learning Boolean formulas is NP-complete. Proceedings of the 12th World Computer Congress, Stream Algorithms and Efficient Computation, Madrid, Spain, September 7-11, 1992, pp. 249-256.
6. V.Valev. Pictorial pattern recognition by Boolean formulas. Published in the book *Mathematical Research, Theoretical Foundation of Computer Vision*, R.Klette and W.Kropatsch, Eds. 5th Workshop on Theoretical Foundation of Computer Vision, Buckow, Germany, March 29 - April 3, 1992. Published in the book *Mathematical Research*, Akademie Verlag, 1993, Vol.69, pp. 241-250.
7. V.Valev, P.Radeva. On the determining of non-reducible descriptors for multidimensional pattern recognition problems. *Pattern Recognition and Image Analysis: Advances in Mathematical Theory and Applications*, Interperiodica Publishing Company and the Cybernetics Scientific Council of the Russian Academy of Sciences, Vol.3, No.3, 1993, pp. 258-265.
8. V.Valev. A model-based image quantization technique in supervised image recognition. 5th International Conference on Computer Analysis of Images and Patterns (CAIP'93), Budapest, Hungary, September 13-15, 1993. Published in the book *Computer Analysis of Images and Patterns*, D.Chetverikov and G.Kropatsch, Eds. *Lecture Notes in Computer Science* (LNCS), Vol.719, Springer-Verlag, 1993, pp. 128-132.
9. V.Valev, P.Radeva. Structural pattern recognition by non-reducible descriptors. 3rd IAPR Int. Workshop on Structural and Syntactic Pattern Recognition (SSPR 1994), Nahariya, Israel, October 4-6, 1994. Published in the book *Shape, Structure and Pattern Recognition*. D.Dori and A.Bruckstein, Eds. World Sci. Publ., Singapore, 1995, pp. 221-230.
10. V.Valev, P.Radeva. ECG recognition by non-reducible descriptors. Proceedings of 7th Portuguese Conference on Pattern Recognition (RECPAD 1995), Aveiro, Portugal, March 23-24, 1995, pp. 321-325.
11. V.Valev, P.Radeva. Constructing of quantitative non-reducible descriptors. Proceedings of 9th Scandinavian Conference on Image Analysis (9th SCIA), Uppsala, Sweden, June 6-9, 1995, pp. 981-988.
12. V.Valev. Construction of Boolean classification rules and their applications in computer vision problems. *International Journal on Machine GRAPHICS & VISION*, Vol.5, Nos.1/2, 1996, pp. 5-23.
13. V.Valev, P.Radeva. Construction of Boolean decision rules for ECG recognition by non-reducible descriptors. Proceedings of 13th International Conference on Pattern Recognition, 13th ICPR, Vienna, Austria, August 25-30, 1996, Vol.B, pp. 111-115.
14. V.Valev, P.Radeva. ECG recognition by Boolean decision rules. 14th Int. Congress on Medical Informatics Europe'97 (MIE'97), Porto Carras, Halkidiki, Greece, 25-29 May, 1997. Published in

- the book *Studies in Health Technology and Informatics*, Vol.43, C.Pappas, N.Maglaveras and J.-R.Scherrer, Eds., 1997, pp. 556-560.
15. V.Valev, I.Baruh. Recurrent neural networks and applications. Proceedings of the 4th Seminar on Neural Network Applications in Electrical Engineering (NEUREL-97), Faculty of Electrical Engineering, University of Belgrade, Yugoslavia, September 8-9, 1997, pp. 115-126.
  16. V.Valev. Set partition principles revisited. 7th IAPR Int. Workshop on Structural and Syntactic Pattern Recognition (SSPR 1998), Sydney, Australia, August 11-13, 1998. Published in the book *Advances in Pattern Recognition*, A.Amin, D.Dori, P.Pudil and H.Freeman, Eds. *Lecture Notes in Computer Science* (LNCS), Vol.1451, Springer-Verlag, 1998, pp.875-881.
  17. V.Valev, G.Wang, M.W.Vannier. Techniques of CT colonography (Virtual Colonoscopy). *Critical Reviews in Biomedical Engineering*, Vol. 27, Issues 1&2, 1999, pp. 1-26.
  18. V.Valev. Supervised pattern recognition by feature partitioning. Proceedings of the Eight Turkish Symposium on Artificial Intelligence and Neural Networks (TAINN'99), June 23-25, 1999, Bogazici University, Istanbul, Turkey, pp. 115-121.
  19. V.Valev. On the experience of teaching Biomedical Modeling at the University of Medicine and Dentistry of New Jersey. Proceedings of the International Conference on Computer Based Experiments, Learning and Teaching (COMBELET'99), Wroclaw University of Technology, Szklarska Poreba, Poland, September 24 – October 1, 1999, pp. 263-268.
  20. V.Valev, A.Asaithambi. Multidimensional pattern recognition problems and combining classifiers. Proceedings of 11th Portuguese Conference on Pattern Recognition (RECPAD 2000), Porto, Portugal, May 11th - 12th, 2000, pp. 393-397.
  21. V.Valev, P.Radeva, B.Sankur. Generalized non-reducible descriptors. Proceedings of 15th International Conference on Pattern Recognition, 15th IAPR, Barcelona, Spain, September 3-8, 2000, Vol.2, Pattern Recognition and Neural Networks, pp. 394-397.
  22. V.Valev, A.Asaithambi. Multidimensional pattern recognition problems and combining classifiers. *Pattern Recognition Letters*, Vol.22, 2001, pp. 1291-1297.
  23. A.Asaithambi, V.Valev. A decision-tree approach to the discovery of empirical regularities. Proceedings of 3rd International Conference on Information Reuse and Integration (IRI 2001). IEEE Systems, Man, and Cybernetics Society (SMC), Las Vegas, Nevada, November 27-29, 2001, pp. 18-23.
  24. V.Valev, A.Asaithambi. On computational complexity of non-reducible descriptors. Proceedings of 12th Portuguese Conference on Pattern Recognition (RECPAD 2002), Aveiro, Portugal, June 27-28, 2002.
  25. V.Valev, A.Asaithambi. Fuzzy non-reducible descriptors. 5th International Conference on Computer Vision, Pattern Recognition and Image Processing (CVPRIP 2003), Research Triangle Park, North Carolina, September 26-30, 2003, Proceedings of the 7th Joint Conference on Information Sciences, JCIS 2003, pp. 651-654.
  26. V.Valev. Supervised pattern recognition by parallel feature partitioning. 5th International Conference on Computer Vision, Pattern Recognition and Image Processing (CVPRIP 2003), Research Triangle Park, North Carolina, September 26-30, 2003 Proceedings of the 7th Joint Conference on Information Sciences (JCIS 2003), pp. 833-836.
  27. V.Valev, A.Asaithambi. On computational complexity of non-reducible descriptors. Proceedings of the 2003 IEEE International Conference on Information Reuse and Integration, (IRI 2003), IEEE Systems, Man, and Cybernetics Society (SMC), Las Vegas, Nevada, October 27-29, 2003, pp. 208-211.
  28. V.Valev, A.Asaithambi. Fuzzy non-reducible descriptors. *International Journal on Machine GRAPHICS & VISION*, Vol.12, No.3, 2003, pp. 353-361.
  29. V.Valev. Supervised pattern recognition by parallel feature partitioning. *Pattern Recognition*, Vol.37, No.3, 2004, pp. 463-467.
  30. A.Asaithambi, V.Valev. Construction of all non-reducible descriptors. *Pattern Recognition*, Vol.37, No.9, 2004, pp. 1817-1823.

31. V.Valev, B.Sankur. Generalized non-reducible descriptors. *Pattern Recognition*, Vol.37, No.9, 2004, pp. 1809-1815.
32. V.Valev. Supervised pattern recognition with heterogeneous features. 9th Iberoamerican Congress on Pattern Recognition, CIAPR 2004, Puebla, Mexico, October 26-29, 2004. Published in the book *Progress in Pattern Recognition, Image Analysis and Applications*. A.Sanfeliu, J.F.Martinez Trinidad and J.A.Carrasco Ochoa, Eds. *Lecture Notes in Computer Science* (LNCS), Vol.3287, Springer-Verlag, 2004, pp. 693-700.
33. V.Valev. Supervised pattern recognition with heterogeneous features. *International Journal on Machine GRAPHICS & VISION*, Vol.13, No.4, 2004, pp. 345-353.
34. V.Valev. Machine learning of syndromes for different types of features. 2<sup>nd</sup> International Workshop on Machine Learning, Pattern Recognition and Applications, Proceedings of the International Conference on High Performance Computing & Simulation (HPCS 2011), Istanbul, Turkey, 4–8 July 2011, pp. 504-509.
35. V.Zeljковиć, M.Bojić, C.Tameze, V.Valev. Classification algorithm of retina images of diabetic patients based on exudates detection. 3<sup>rd</sup> International Workshop on Machine Learning, Pattern Recognition and Applications, Proceedings of the 2012 International Conference on High Performance Computing & Simulation (HPCS 2012), Madrid, Spain, 2-6 July, 2012, pp. 167-173.
36. V.Valev, N.Yanev. Classification using graph partitioning. Proceedings of the 21<sup>st</sup> International Conference on Pattern Recognition, 21st ICPR, Tsukuba International Congress Center, Tsukuba Science City, Japan, November 11-15, 2012, pp. 1261-1264.
37. V.Zeljковиć, M.Bojić, C.Tameze, V.Valev. Exudates detection and classification algorithm of diabetic patients' retina images. *Journal of Circuits, Systems, and Computers* (JCSC), World Scientific Publishing, Vol.22, No.2, 2013, pp. 1-15.
38. V.Valev. From features to predicates or from symptoms to syndromes in supervised pattern recognition. Proceedings of the International Conference on Pattern Recognition Applications and Techniques (ICPRAT 2013), Chennai, India, 1–2 March 2013, Invited talk and paper, pp. 5-20.
39. J.R.Cózar, V.Zeljковиć, J.M.González-Linares, N.Guil, C.Tameze, V.Valev. A Framework for TV logos learning using linear inverse diffusion filters for noise removal. 4th International Workshop on Machine Learning, Pattern Recognition and Applications, Proceedings of the 2013 International Conference on High Performance Computing & Simulation (HPCS 2013), Helsinki, Finland, 1-5 July, 2013, pp. 621-625.
40. V.Zeljковиć, V.Valev, C.Tameze, M.Bojić. Pre-ictal phase detection algorithm based on one dimensional EEG signals and two dimensional formed images analysis. 4th International Workshop on Machine Learning, Pattern Recognition and Application, Proceedings of the 2013 International Conference on High Performance Computing & Simulation (HPCS 2013), Helsinki, Finland, 1-5 July, 2013, pp. 607-614.
41. V.Zeljковиć, M.Bojić, C.Tameze, V.Valev. Exudates and optic disc detection in retina images of diabetic patients. *Journal Concurrency and Computation: Practice and Experience*, DOI: 10.1002/cpe.3215, 2014., pp. 172-192
42. V.Zeljковиć, D.Zhang, V.Valev, Z.Zhang, S.Zhu, J.Li. Personal access control system using moving object detection and face recognition. 5<sup>th</sup> International Workshop on Machine Learning, Pattern Recognition and Applications, Proceedings of the 2014 International Conference on High Performance Computing & Simulation, (HPCS 2014), Bologna, Italy, July 21-25, 2014, pp. 662-669.
43. J.Cózar, V.Zeljковиć, J. González-Linares, N.Guil, M.Bojić, V.Valev. Pre-ictal phase detection with SVMs. 5<sup>th</sup> International Workshop on Machine Learning, Pattern Recognition and Applications, Proceedings of the 2014 International Conference on High Performance Computing & Simulation (HPCS 2014), Bologna, Italy, July 21-25, 2014, pp. 656-661.

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## **XIX. Citations of the Obtained Results**

Theoretical and practical results obtained are used and cited by more than 500 times in conference proceedings, in periodicals and in computer science and information technology journals with impact factor.