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1. Fields of Specialization and Interest

- Computer Vision, Neural Networks, Image/Video Processing, Multimedia Codec Design, Multimedia and Multimedia Security, Video Quality Assessment, Theoretical and Applied Cryptology, Embedded System Design and Tools, Evolutionary Computing, Data Mining.

2. Educational Background

- *Aug 2003 – Aug 2006* Ph.D. in Computer Engineering
Florida Atlantic University, Boca Raton, Florida (USA)
- *Oct 2000 – May 2003* M Sc Degree in Computer Engineering
University of Novi Sad, Yugoslavia
- *Sep 1995 – Sep 2000* B.Sc. Degree in Electrical and Computer Engineering
University of Novi Sad, Yugoslavia

3. Employment History

<i>12/2007 to date</i>	Assistant Professor, University of Novi Sad, Serbia
<i>2/2006 to date</i>	Cofounder, Consultant and Director of technology development, CoreTex Systems, LLC
<i>1/2004 to 8/2006</i>	Research Assistant, Florida Atlantic University, USA
<i>1/2004 to 4/2004</i>	Instructor for Introduction to Microprocessors, Florida Atlantic University, USA
<i>8/2003 to 12/2003</i>	Graduate Teaching Assistant for Logic Design and Introduction to Microprocessors and Logic Design, Florida Atlantic University, USA
<i>10/2000 to 8/2003</i>	Graduate Teaching Assistant for Design of Real-Time Systems, University of Novi Sad, Serbia
<i>10/2000 to 8/2003</i>	Graduate Teaching Assistant for Design of Custom Computer Systems, University of Novi Sad, Serbia
<i>10/2000 to 8/2003</i>	Associate at Micronas NIT LLC (Design/Implementation), Novi Sad, Serbia

4. Computing Experience

- **Programming Languages:** C#, C/C++, VC++ (MFC), Assembly (DSP/ARM), Java/J++, VHDL, Pascal, Prolog.
- **Development and Programmable Environments:** OpenCV, Matlab, MS Visual Studio, NVIDIA CUDA, APL, ARM Code Warrior, Xilinx, ACE Compiler Generator Toolkit, MPI.

5. Teaching

- Introduction to Microprocessors, Florida Atlantic University, USA.
- Business Process Automation, Faculty of Technical Sciences, University of Novi Sad, Serbia.
- E-Business Technology, Faculty of Technical Sciences, University of Novi Sad, Serbia.
- Advanced Information Technology, Faculty of Technical Sciences, University of Novi Sad, Serbia.
- Multimedia and Global Media, Faculty of Technical Sciences, University of Novi Sad, Serbia.
- Algorithms and Data Structures, Faculty of Technical Sciences, University of Novi Sad, Serbia.
- Applied electronics, Technical College Zrenjanin, Serbia.

6. Commercial Projects Completed

- Design and implementation of a C Compiler for a family of Digital Signal Processors MAS35xx (made by MICRONAS). Responsible for liveness analysis, code synchronization modules and code optimization modules for Micronas GmbH, Hans-Bunte-Strasse 19, D-79108 Freiburg Germany.
- Design, implementation and maintenance of a tool used to optimize DSP assembler code for Micronas GmbH, Hans-Bunte-Strasse 19, D-79108 Freiburg Germany .
- MIDI audio synthesis DSP based application for Micronas GmbH, Hans-Bunte-Strasse 19, D-79108 Freiburg Germany.
- Porting the GNU C compiler to a MIPS based platform for Micronas NIT, 21000 Novi Sad, Serbia.
- Implementing a multithreading environment to a MIPS based platform for Micronas NIT, 21000 Novi Sad, Serbia.
- Design of FPGA-s for AES and DES cryptographic algorithms for Coretex Systems, LLC, 2851 S Ocenal Blvd. Boca Raton, FL33432, USA.
- Implementation of MPEG Audio decoder for OMAP platform for Telex, 8601 East Cornhusker Hwy. Lincoln, NE 68507, USA.
- Video coding consulting for RealNetworks, Inc., 2601 Elliott Avenue, Seattle, WA 98121, USA.

7. Research Projects

- Center for Coastline Security Technologies, US Federal Earmark Research Project, Florida Atlantic University, USA, 2004-2006.
- One Pass to Production, Motorola's sponsored research project, Florida Atlantic University, USA. 2003-2005.
- Wireless Sensor Networks and Remote Sensing - Foundation of a modern agricultural infrastructure in the region, FP7 AgroSense Project: REGPOT-2007-3, Project number: FP7-204472, 2008 - 2011.

- Video Content Analysis for Automated Traffic Surveillance, EUREKA Project, Project number: E!4160-VICATS, 2008-2010.
- Wireless Sensor Networks and Remote Sensing - Foundations of Modern Agricultural Infrastructure, Serbian National Technology Development Project , Project number: TR-11022, 2008 – 2010.
- Parallel processing for vector optimization in audio/video signal processing , Serbian National Fundamental Research Project , Project number: OI-161003, 2008 – 2010.
- COST action IC0702 "Combining Soft Computing Techniques and Statistical Methods to Improve Data Analysis Solutions", MC member and national coordinator, 2009-2012.
- COST action IC0903 " MOVE: Knowledge Discovery from Moving Objects", MC substitute member, 2010-2013.

8. Academic Recognitions, Honors, and Awards

- 2005-2006 The Daniel B. Newell and Aurel B. Newell Doctoral Fellowship (\$5,000.00), Florida Atlantic University

9. Selected Publications

Journal Papers:

- D. Culibrk, M. Mirkovic, V.Zlokolica, M. Pokric, V. Crnojevic, D. Kukulj, "Salient Motion Features for Video Quality Assessment", accepted to IEEE Trans. on Image Processing.
- D. Culibrk, O. Marques, D. Socek, H. Kalva and B. Furht, "Neural Network Approach to Background Modeling for Video Object Segmentation", IEEE Trans. on Neural Networks, 2007, Vol. 18, No. 6, str. 1614- 1627, ISSN 1045-9227.
- D. Socek, D. Čulibrk, O.F. Marques, H. Kalva and B. Furht: A Hybrid Color-Based Foreground Object Detection Method for Automated Marine Surveillance, Lecture Notes in Computer Science, 2005, Vol. 3708, str. 340- 347, ISSN 0302-9743.
- Daniel Socek, Hari Kalva, Spyros S. Magliveras, Oge Marques, Dubravko Čulibrk and Borko Furht: New approaches to encryption and steganography for digital videos, Multimedia Systems, 2007, Vol. 13, No. 3, str. 191- 294, ISSN 1432-1882.
- Čulibrk, D., Daniel Socek and Michal Sramka: Cryptanalysis of a Symmetric Probabilistic Encryption Scheme Based on Chaotic Attractors of Neural Networks, Tatra Mountains Mathematical Publications, 2007, Vol. 37, str. 75- 91,
- Daniel Socek, Spyros Magliveras, Dubravko Čulibrk, Oge Marques, Hari Kalva, and Borko Furht: Digital Video Encryption Algorithms Based on Correlation-Preserving Permutations, EURASIP Journal on Information Security, 2007, ISSN 1687-4161.
- Daniel Socek, Vladimir Božović and Dubravko Čulibrk: Securing Biometric Templates where Similarity is Measured with Set Intersection, CCIS (Communications in Computer and Information Science), 2008, Vol. 23, pp. 139-151, ISSN 1865-0929.Ica
- Daniel Socek, Vladimir Božović and Dubravko Čulibrk, "Issues and Challenges in Storing Biometric Templates Securely", Revue de l'Electricité et de l'Electronique (REE), 2008.

Conference Papers:

- Dubravko Culibrk, Vladimir Crnojevic: GPU-Based Complex-Background Segmentation Using Neural Networks, International Machine Vision and Image Processing Conference (IMVIP), Limerick, Ireland, 8-10. September, 2010.
- Dubravko Čulibrk, Borislav Antić, Vladimir Crnojević: Real-time Stable Texture Regions Extraction for Motion-based Object Segmentation, 20th British Machine Vision Conference, BMVC 2009, London, UK: British Machine Vision Association, 7.-10. September, 2009.
- Dubravko Culibrk, Dragan Kukulj, Petar Vasiljevic, Maja Pokric, Vladimir Zlokolica: Feature Selection for Neural-Network Based No-Reference Video Quality Assessment, Artificial

Neural Networks – ICANN 2009, Part II, LNCS, Theoretical Computer Science and General Issues, Vol. 5769, 2009, ISBN: 978-3-642-04276-8.

- Vladimir Crnojević, Borislav Antić, Dubravko Čulibrk: Optimal Wavelet Differencing Method for Robust Motion Detection, 16th IEEE International Conference on Image Processing, ICIP 2009, Cairo, Egypt: IEEE, 07.-11. November, 2009
- Borislav Antić, Dragan Letić, Dubravko Čulibrk, Vladimir Crnojević: K-means Based Segmentation for Real-Time Zenithal People Counting, 16th IEEE International Conference on Image Processing, ICIP 2009, Cairo, Egypt: IEEE, 07.-11. November, 2009
- Borislav Antić, Jorge Oswaldo Niño Castaneda, Dubravko Čulibrk, Aleksandra Pižurica, Vladimir Crnojević, Wilfried Philips: Robust Detection and Tracking of Moving Objects in Traffic Video Surveillance, 11th International Conference on Advanced Concepts for Intelligent Vision Systems, ACIVS 2009, Bordeaux, France: Lecture Notes in Computer Science 5807, Springer-Verlag, 28. September - 2. October 2009, pp. 494- 505.
- Borislav Antić, Vladimir Crnojević, Dubravko Čulibrk: Efficient wavelet based detection of moving objects, 16th International Conference on Digital Signal Processing, DSP 2009, Santorini, Greece: IEEE, 5.-7. July, 2009, str. 1- 6, ISBN 978-1-4244-3298-1.
- Dubravko Čulibrk, Vladimir Crnojević, Borislav Antić: Multiscale Background Modelling and Segmentation, 16th International Conference on Digital Signal Processing, DSP 2009, Santorini, Greece: IEEE, 5.-7. July, 2009, str. 1- 6, ISBN 978-1-4244-3298-1.
- Dragan Letić, Borislav Antić, Dubravko Čulibrk, Vladimir Crnojević: Automatic Estimation of Traffic Flow Parameters in Traffic Video Surveillance Systems, INFOTEH-JAHORINA 2009, Jahorina, BiH, 18.-20. mart, 2009.
- Dubravko Čulibrk, Borislav Antić, Vladimir Crnojević: Motion Detail Driven Vehicle Detection in Surveillance Videos, INFOTEH-JAHORINA 2009, Jahorina, BiH, 18.-20. mart, 2009.
- Čulibrk, D., Antic B., Crnojevic V.: Boosting change based features for vehicle detection, National Conf. of Digital speech and image processing, Kelebija: 2008
- Čulibrk, D., "Efficient Motion Based Object Segmentation For Traffic Surveillance", IS '08 XIV International Scientific Conference On Industrial Systems, Novi Sad: 2008.
- Čulibrk, D., Antic B., Crnojevic V., "Boosting change based features for vehicle detection", National Conf. of Digital speech and image processing, Kelebija: 2008,
- Antic B., Letic D., Crnojevic V., Čulibrk, D., "Performance analysis of algorithms for video background subtraction", National Conf. of Digital speech and image processing, Kelebija: 2008,
- Daniel Socek, Dubravko Culibrk and Vladimir Bozovic, "Practical Secure Biometrics Using Set Intersection as a Similarity Measure", SECRIPT 2007, July 28-31, Barcelona Spain.
- Vladimir Bozovic, Daniel Socek, Dubravko Culibrk, "Issues and Challenges in Storing Biometric Templates Securely", July 2-5, CRISIS 2007, Marrakech, Morocco.
- Dubravko Čulibrk, Vladimir Radenković, Daniel Socek, "Enhancing Video Object Segmentation Results Through Biologically Inspired Postprocessing", TELSIXS 2007, September 26 - 28, Niš, Serbia.
- Dubravko Culibrk, Daniel Socek, Oge Marques and Borko Furht, "Automatic Kernel Width Selection for Neural Network Based Video Object Segmentation", VISAPP 2007 (International Conference on Computer Vision Theory and Applications), March 8-12, 2007, Barcelona, Spain.
- D. Socek, M. Sramka, Oge Marques and D. Culibrk, "An Improvement to a Biometric-Based Multimedia Content Protection Scheme", in Proc. *ACM Multimedia and Security Workshop (ACM2006)*, Geneva, Switzerland, September 26-28, 2006.
- Dubravko Culibrk, Oge Marques, Daniel Socek, Hari Kalva, and Borko Furht, "A Neural Network Approach to Bayesian Background Modeling for Video Object Segmentation", VISAPP 2006 (International Conference on Computer Vision Theory and Applications), 25-28 Feb, 2006, Setubal, Portugal.
- Daniel Socek, Hari Kalva, Spyros S. Magliveras, Oge Marques, Dubravko Culibrk, and Borko Furht, "A permutation-based correlation-preserving encryption method for digital videos ",

ICIAR 2006 – International Conference on Image Analysis and Recognition, September 18-20, 2006, Póvoa de Varzim, Portugal.

- D. Socek and D. Culibrk, “On the Security of a Clipped Hopfield Neural Network Cryptosystem”, in Proc. *ACM Multimedia and Security Workshop (ACM2005)*, New York City, New York, August 1-2, 2005, pp. 71-75
- Daniel Socek, Dubravko Culibrk, Hari Kalva, Oge Marques, and Borko Furht, "Permutation-Based Low-Complexity Alternate Coding in Multi-View H.264/AVC", IEEE International Conference on Multimedia & Expo (ICME) 2006, July 9-12, 2006, Toronto, Canada.
- D. Socek, D. Culibrk, O.F. Marques, H. Kalva and B. Furht, “A Hybrid Color-Based Foreground Object Detection Method for Automated Marine Surveillance”, in Proc. *Advanced Concepts for Intelligent Vision Systems (ACIVS 2005)*, Antwerp, Belgium, September 20-23, 2005
- D. Culibrk, D. Socek and M. Sramka, “Cryptanalysis of the Block Cipher based on the Hopfield Neural Network”, accepted at the *5-th Central European Conference on Cryptology (MoraviaCrypt '05)*, Brno, Czech Republic, June 15-17, 2005
- M. Popovic, Z. Jovanovic, I. Pap, V. Medic, D. Culibrk, “A C Compiler Design Concept Used for MAS family of Digital Signal Processors”, 5th International Conference on Telecommunications in Modern Satellite, Cable and Broadcasting Services –TELSIKS, Niš, Yugoslavia, 2001.
- N. Trninić, M. Popović, D. Čulibrk, S. Babić, J. Kovačević, "Implementation of Optimization Techniques for Assembly Language Programs for Deep Pipeline Digital Signal Processors", XLIV ETRAN Conference, Sokobanja, Yugoslavia 2000.

Theses:

- D. Culibrk, “*A Solution to the Problem of Determining a Suboptimal Strategy of Assembler Code Optimization for a Class of Processors Using the Genetic Algorithms*”, *M.Sc. Thesis*, Department of Computer Engineering, University of Novi Sad, May 2003.

Dissertation:

- D. Culibrk, “*Neural Network Approach to Bayesian Background Modeling for Video Object Segmentation*”, *PhD Dissertation*, Department of Computer Science & Engineering, Florida Atlantic University, August 2006.