

Samim Konjicija - Curriculum Vitae

Contact information

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Address: Faculty of Electrical Engineering, University of Sarajevo
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Key Attributes

- More than ten years of research experience with participation in international collaboration and multidisciplinary projects
- Experience in industrial research and joint projects between industry and academia
- Expertise in control theory, automation, optimization algorithms, electronics and microprocessor-based systems
- Expertise in Matlab/Simulink/Real Time Workshop, LabView, PCB-design software
- Knowledge of wide range of programming languages, tools and environments
- Knowledge in field of microprocessor-based and embedded systems (professional experience with Microchip's, Atmel's and ARM's family of microcontrollers, work with various IDEs with assembler and C, HW and SW development)
- Knowledge of SCADA and PLC systems, Siemens' family of PLCs, Moeller's family of PLCs

Educational Background

Degree	Major	Awarding institution	Date awarded
PhD	Electrical Engineering	University of Sarajevo	November 2007
	Thesis title: Evolutionary Approach to Solving Dynamic Multi-objective Optimization in Processes of Decision Making		
	Advisor: Professor Zikrija Avdagić		
MSc	Electrical Engineering	University of Sarajevo	October 2003
	Thesis title: Use of Genetic Algorithm with Adaptive Operators for Improvement of Performance of Feed Forward Neural Network		
	Advisor: Professor Zikrija Avdagić		
BSc	Electrical Engineering	University of Sarajevo	July 1997
	Thesis title: Modification of Inter-PLC Communication on Packaging Machine in Tobacco Factory		
	Advisor: Professor Sead Kreso		

Professional experience

Date	Employer and Job description
2011-Current	Faculty of Electrical Engineering, University of Sarajevo, Department of Computing and Informatics, Head of Department
1997-Current	Faculty of Electrical Engineering, University of Sarajevo, currently Associate Professor before: Teaching Assistant, Lecturer, Assistant Professor (1997-2002 part-time, 2002-Current full-time) Teaching courses at undergraduate, graduate and postgraduate levels, work with groups of students, participation in projects with academics and industry.
2008-2011	Faculty of Information Technology, University of Mostar, Assistant Professor (Part-time) Teaching courses at undergraduate and postgraduate level.
2008-2009 and 2011-2012	International University of Sarajevo, Assistant Professor (Part-time) Teaching courses at undergraduate level.
2011-2012	Sarajevo School of Science and Technology, Assistant Professor (Part-time) Teaching a course at graduate level
2005-2012	Short-term IT Consultant to the Delegation of European Commission to Bosnia and Herzegovina Writing technical specifications for tenders, supervision of project implementations, issuing provisional acceptance certificates and final acceptance certificates after implementation of IT projects financed by European Commission in Bosnia and Herzegovina.
2000-2002	Zrcalo d.o.o. Sarajevo, Manager of Software Development Department Development of e-banking solutions implemented in several banks in Bosnia and Herzegovina, leading a group of engineers.
1999-2000	Printing House „Fojnica“, Fojnica, Manager of Maintenance Department Leading a group of technicians in everyday maintenance and installation works.
1997-1999	Electric Power Utility of Bosnia and Herzegovina, Department for Transmission of Electrical Power, Sarajevo, Engineer for Technical Information System Planning, implementation and maintenance of SCADA system and substation automation systems in facilities of transmission network 110 kV, 220 kV and 400 kV, work in office and in field.

Research Interests/Activities

Heuristic Algorithms, Soft-computing, Optimization, Artificial Intelligence, Embedded Systems, Optimal Control, Digital Control

Major Research Projects

Jun 2012- current	Buzzaar Webmaps (project leader for Faculty of Electrical Engineering in Sarajevo) École Polytechnique Fédérale de Lausanne (EPFL), Meetopia, Faculty of Electrical Engineering in Sarajevo, EPFL
Jan 2013- current	Developing information literacy for lifelong learning and knowledge economy in Western Balkan countries (Tempus Project No. 517117) (project leader for University of Sarajevo)

Limerick Institute of Technology (Ireland), University of Sarajevo, Agricultural University of Tirana, University of Tirana, University of Bihać, Univerzitet „Fan S. Noli“ in Korca (Albania), University of Montenegro, University of Mostar, National and University Library of Kosovo, University of Priština (Kosovo), Transilvanian University in Romania, University of Crete (Greece), University of Middlesex (UK)

Oct 2004-

Sep 2007

Intelligent Methods for Control of Vehicles and Vehicle Components

Faculty of Electrical Engineering in Sarajevo, Friedrich-Alexander Universität Erlangen-Nürnberg, Lehrstuhl für Regelungstechnik, DAAD

Nov 2004-

Oct 2005

The Three Dimensional Computer Reconstruction and Interactive High Fidelity Visualization of Bosnian Heritage Sites

Faculty of Electrical Engineering in Sarajevo, University of Bristol, The Department of Computer Science, UNESCO <http://www.etf.unsa.ba/unesco/index2.htm>

Jan 2004-

Dec 2004

Autonomous Mobile Robot System as a Simulator of Wheelchair Motion Behavior

Faculty of Electrical Engineering in Sarajevo, Federal Ministry of Science and Education, <http://www.etf.unsa.ba/%7Ejvelagic/laras/research.htm>

Oct 2003-

Sep 2004

Application of Softcomputing Methods for Longitudinal and Lateral Control of Vehicles at Lower Velocities, Application of Softcomputing Methods for Realization of an Adaptive Damper for Driver's Seat in a Vehicle

Faculty of Electrical Engineering in Sarajevo, Friedrich-Alexander Universität Erlangen-Nürnberg, Lehrstuhl für Regelungstechnik, DAAD

Oct 2002-

Sep 2003

Application of Methods of Artificial Intelligence in Design of Controller for Robotic Manipulator

Faculty of Electrical Engineering in Sarajevo, Friedrich-Alexander Universität Erlangen-Nürnberg, Lehrstuhl für Regelungstechnik, DAAD

Oct 2000-

Sep 2001

Computer Aided Design of Controller for a Complex System (Robotic Arm),

Faculty of Electrical Engineering in Sarajevo, Friedrich-Alexander Universität Erlangen-Nürnberg, Lehrstuhl für Regelungstechnik, DAAD

Awards and recognitions

Best Paper Award for the Symposium "Soft Computing and Knowledge Based Systems" for the paper: S. Konjicija, Z. Avdagic, "**Performance of Genetic Algorithm with Adaptive Mutation Probability Dependant on Fitness in Dynamic Environments**", 18th European Meeting on Cybernetics and Systems Research, EMCSR 2006, Vienna, Austria, 2006

Best Paper Award for the Symposium "Soft Computing and Knowledge Based Systems" for the paper: S. Konjicija, Z. Avdagic, "**Adaptive Mutation in Genetic Algorithm with Binary Coding**", 17th European Meeting on Cybernetics and Systems Research, EMCSR 2004, Vienna, Austria, 2004

Teaching experience

Dates	Course name	Level	Institution
As Assistant Professor:			
2013	Multiobjective Optimal Control	PG	U. of Sarajevo, F. of EE, Dept. of Automatic Control and Electronics
2013	Real-time Embedded Systems	PG	U. of Sarajevo, F. of EE, Dept. of Computing and Informatics
2012	Multiobjective Optimization and Decision Making	PG	U. of Sarajevo, F. of EE, Dept. of Computing and Informatics
2011	Computer and Software Systems	PG	U. of Sarajevo, F. of EE, Dept. of Computing and Informatics
2009, 2010, 2011	Theory of Decision Making	PG	U. of Sarajevo, F. of EE, Dept. of Automatic Control and Electronics
2008-current	Optimal Control	G	U. of Sarajevo, F. of EE, Dept. of Automatic Control and Electronics
2009-current	Intelligent Control	G	U. Of Sarajevo, F. of EE, Dept. of Automatic Control and Electronics
2008-current	Optimization of Resources	G	U. of Sarajevo, F. of EE, Dept. of Computing and Informatics
2007-current	Lab Work in Control	UG	U. of Sarajevo, F. of EE, Dept. of Automatic Control and Electronics
2006-current	Lab Work in Control and Informatics	UG	U. of Sarajevo, F. of EE, Dept. of Automatic Control and Electronics and Dept. of Computing and Informatics
2009	Parallel Computer Architectures and Distributed Systems	PG	U. of Mostar, Faculty of Information Technologies
2010	Embedded and Real-Time Systems	PG	U. of Mostar, Faculty of Information Technologies
2011	Introduction to Data Mining	PG	U. of Mostar, Faculty of Information Technologies
2007-2011	Computer Networks	UG	U. of Mostar, Faculty of Information Technologies
2007-2011	Communications Technologies	UG	U. of Mostar, Faculty of Information Technologies
2008	Computer Architectures	UG	International University of Sarajevo, FENS
2008	Logic Design	UG	International University of Sarajevo, FENS
2011	Introduction to Data Mining	UG	International University of Sarajevo, FENS
2011, 2013	Collective Intelligence for Decision Making	G	Sarajevo School of Science and Technologies

As Teaching Assistant:

1997-2005	Optimization Theory	G	U. of Sarajevo, F. of EE, Dept. of Automatic Control and Electronics
2001-2005	Artificial Intelligence	G	U. of Sarajevo, F. of EE, Dept. of Computing and Informatics
2001-2005	Digital Control Systems	G	U. of Sarajevo, F. of EE, Dept. of Automatic Control and Electronics
1999-2000	Digital Electronics Lab	G	U. of Sarajevo, F. of EE, Dept. of Control and Electronics and Dept. of Communications

Activities and memberships in professional Societies

IEEE (CIS, CS, RA, SMC)

BHITS – IT Society of Bosnia and Herzegovina

DAAD Alumni of Bosnia and Herzegovina

Books and book chapters

S. Konjicija: "**Heuristički algoritmi**", (in Bosnian) Univerzitet u Sarajevu, ISBN 978-9958-629-54-9, 2013.

Z. Avdagić, S. Konjicija, S. Omanović: "**Evolutionary Approach to Solving Non-stationary Dynamic Multi-objective Problems**", 9th Chapter in Abraham, A.; Hassanien, A.-E.; Siarry, P.; Engelbrecht, A. (Eds.): "**Foundations of Computational Intelligence Volume 3: Global Optimization**" Springer Verlag, Series: Studies in Computational Intelligence, Vol. 203, ISBN: 978-3-642-01084-2, 2009.

Abdulah Akšamović, Samim Konjicija, Saša Mrdović: "**Algorithm for Elimination of DC Component from Fault Current**", GESTS International Transactions on Communication and Signal Processing, Vol. 6, No. 1, ISBN 89-953729-6-6, 2006.

Zikrija Avdagić, Samim Konjicija, Bakir Lačević: "**Design of Artificial Neural Network Controller Based on Adaptable Parameters Evolutionary Algorithms**", 1st chapter in Branko Katalinić (Ed.): "**DAAM International Scientific Book 2005**", DAAM, Vienna, Austria, ISBN 3-901509-43-7, 2005.

Refereed publications and conference proceedings

S. Smaka, S. Konjicija, Š. Mašić, M. Čosović: "**Multi-Objective Design Optimization of 8/14 Switched Reluctance Motor**", Proceedings of the 2013 IEEE International Electric Machines and Drives Conference, IEMDC 2013, Chicago, USA, 2013

A. Zec, S. Konjicija, N. Nosović: "**Hybrid Approach in Design of GA Implementation for MapReduce**", 9th International Symposium on Telecommunications, BIHTEL 2012, Sarajevo, Bosnia and Herzegovina, 2012

S. Krivić, M. Hujdur, A. Mrzić, S. Konjicija: "**Design and Implementation of Fuzzy Controller on Embedded Computer for Water Level Control**", Proceedings of the 35th International Convention, MIPRO 2012, Opatija, Croatia, 2012

- S. Smaka, Š. Mašić, M. Čosović, S. Konjicija: **“Multidimensional Performance Optimization of Switched Reluctance Machines”**, 23rd International Symposium on Information, Communication and Automation Technologies, ICAT 2011, Sarajevo, Bosnia and Herzegovina, 2011
- E. Sokić, S. Konjicija, M. Ahić-Đokić, A. Salihbegović: **“Stability Issues in Discretization of Wave Equation”**, 18th International Conference on Systems, Signals and Image Processing, IWSSIP 2011, Sarajevo, Bosnia and Herzegovina, 2011
- T. Uzunović, S. Konjicija, I. Turković: **“Adjustment of Fuzzy Reasoning for Implementation on Microcontroller”**, 18th International Conference on Systems, Signals and Image Processing, IWSSIP 2011, Sarajevo, Bosnia and Herzegovina, 2011
- D. Osmanković, S. Konjicija: **“Implementation of Q-learning Algorithm for Solving Maze Problem”**, Proceedings of the 34th Convention MIPRO 2011, Opatija, Croatia, 2011
- S. Ribić, S. Konjicija: **“Evolution Strategy to Make an Objective Function in Two-Phase ILP Timetabling Solving”**, Telecommunications Forum TELFOR 2011, Beograd, Serbia, 2011
- G. Škondrić, S. Konjicija: **“System Design for Storage Distributed System Inside Local Network”**, Telecommunications Forum TELFOR 2011, Beograd, Serbia, 2011
- N. Osmić, J. Velagić, S. Konjicija, A. Galijašević: **“Genetic algorithm based identification of a nonlinear 2DOF helicopter model”**, 18th Mediterranean Conference on Control & Automation, MED 2010, Marrakech, Morocco, 2010
- Emir Sokić, Melita Ahić-Đokić, Samim Konjicija: **“Sound Field Simulation and Analysis Using Wave Equation and Finite Differences Method”**, 52nd International Symposium, ELMAR 2010, Zadar, Croatia, 2010
- S. Ribić, S. Konjicija: **“A two phase integer linear programming approach to solving the school timetable problem”**, 32nd International Conference on Information Technology Interfaces, ITI 2010, Cavtat, Croatia, 2010
- T. Uzunović, E. Žunić, A. Badnjević, I. Mioković, S. Konjicija: **“Implementation of Digital PID Controller”**, Proceedings of the 33rd International Convention MIPRO 2010, Opatija, Croatia, 2010
- S. Konjicija, Z. Avdagić: **“Evolutionary Multi-Objective Approach to Control of Mobile Robot in Unknown Environment”**, XXII International Symposium on Information, Communication and Automation Technologies, ICAT 2009, Sarajevo, Bosnia and Herzegovina, 2009
- N. Šrndić, E. Pandžo, M. Dervišević, S. Konjicija: **“The application of a Parallel Genetic Algorithm to timetabling of elementary school classes: A coarse grained approach”**, XXII International Symposium on Information, Communication and Automation Technologies, ICAT 2009, Sarajevo, Bosnia and Herzegovina, 2009
- S. Omanović, Z. Avdagić, S. Konjicija: **“On-line evolving clustering for financial statements' anomalies detection”**, XXII International Symposium on Information, Communication and Automation Technologies, ICAT 2009, Sarajevo, Bosnia and Herzegovina, 2009
- Z. Avdagić, S. Konjicija, S. Ruhotina: **“Use of Artificial Neural Networks in Different Approaches for Reducing Vibration of Driver's Seat”**, 7th IEEE Conference on Industrial Informatics, INDIN 2009, Cardiff, UK, 2009
- A. Akšamović, M. Hebibović, S. Konjicija: **“Similarities in Development of Digital Computers and Mobile Robots”**, International IEEE Conference on Control, EUROCON 2009, St. Petersburg, Russia, 2009
- Z. Avdagić, L. Begić-Fazlić, S. Konjicija: **“Optimized Detection of Tar Content in the Manufacturing Process Using Adaptive Neuro-Fuzzy Inference Systems”**, Medical Informatics in a United and Healthy Europe, MIE 2009, Sarajevo, Bosnia and Herzegovina, 2009
- B. Lačević, S. Konjicija, Z. Avdagić: **„Population Diversity Measure Based on Singular Values of the Distance Matrix“**, IEEE Congress on Evolutionary Computation, CEC 2007, Singapore, Singapore, 2007

A. Nuhić, Z. Avdagić, S. Konjicija: „**Phoneme recognition as a Member of Predefined Class Using Hybrid Cascaded LVQ/Elman Neural Network**“, IEEE International Conference on Signal Processing and Communications, ICSPC 2007, Dubai, United Arab Emirates, 2007

Z. Avdagić, S. Cernica, S. Konjicija: „**Reducing Vibration of the Seat with Semi-active Damper by Using the Artificial Neural Networks**“, 20th International Joint Conference on Neural Networks, IJCNN 2007, Orlando, Florida, U.S.A., 2007

Z. Avdagić, S. Konjicija, B. Lačević: „**Design of Neural Network Controller for Robotic Manipulator Based on Evolutionary Algorithms**“, Joint 3rd International Conference on Soft Computing and Intelligent Systems and 7th International Symposium on advanced Intelligent Systems, SCIS & ISIS 2006, Tokyo, Japan, 2006

Z. Avdagić, E. Cernica, S. Konjicija: „**Longitudinal Vehicle Guidance Using Fuzzy Logic**“, IEEE International Conference on Industrial Technology, ICIT 2006, Mumbai, India, 2006

A. Akšamović, S. Konjicija: „**Algorithm for Elimination of DC Component from Fault Current**“, The 13th IEEE Mediterranean Electrotechnical Conference, MELECON 2006, Malaga, Spain, 2006

S. Konjicija, Z. Avdagić, B. Lačević: „**Performance of Genetic Algorithm with Adaptive Mutation Probability Dependant on Fitness in Dynamic Environments**“, 18th European Meeting on Cybernetics and Systems Research, EMCSR 2006, Vienna, Austria, 2006

S. Konjicija, Z. Avdagić, B. Lačević: „**Genetic Algorithm with Adaptive Mutation Probability in Nonstationary Environments**“, 29th International Convention, MIPRO 2005, Opatija, Croatia, 2006

A. Tahirović, G. I. Meier, S. Konjicija, Z. Avdagić, C. Wurmthaler: „**Comfort Adjustment in Longitudinal Vehicle Guidance using Neural Networks**“, The International Conference on “Computer as a Tool”, EUROCON 2005, Belgrade, Serbia and Montenegro, 2005

A. Akšamović, S. Konjicija, B. Lačević, J. Velagić and B. Peruničić: „**Development of Modular Hierarchical Control Structure for an Autonomous Mobile Robot**“, 13th International Conference on Electrical Drives and Power Electronics, EDPE 2005, Dubrovnik, Croatia, 2005

B. Lačević, S. Konjicija, Z. Avdagić: „**Great Selection Pressure Genetic Algorithm with Adaptive Operators for Adjusting the Weights of Neural Controller**“, 6th IEEE International Symposium on Computational Intelligence in Robotics and Automation, CIRA 2005, Espoo, Finland, 2005

A. Tahirović, G. Meier, S. Konjicija, Z. Avdagić, C. Wurmthaler: „**Longitudinal Vehicle Guidance using Neural Networks**“, 6th IEEE International Symposium on Computational Intelligence in Robotics and Automation, CIRA 2005, Espoo, Finland, 2005

S. Konjicija, Z. Avdagić, A. Akšamović: „**Adaptive Mutation in Genetic Algorithm Used for Tuning of Controller Based on Artificial Neural Network**“, 28th International Convention, MIPRO 2005, Opatija, Croatia, 2005

A. Akšamović, S. Konjicija, B. Lačević, J. Velagić and B. Peruničić: „**Advantage of Open Architecture for Modular Mobile Robotic Platform in Research of Complex Control Algorithms**“, 28th International Convention, MIPRO 2005, Opatija, Croatia, 2005

S. Rizvić, S. Jeginović, S. Konjicija, Z. Avdagić: „**Static Linking of Phonemes to Polygonal 3D Model’s Facial Expressions**“, 21st Spring Conference on Computer Graphics, SCCG 2005, Budimerec, Slovakia, 2005

A. Beroš, S. Konjicija, S. Konjicija, M. Ostojić: „**Model of Effects of Light and Heavy Metals Contents on Mechanical Properties of Al-Si Wheel**“, 6th International Conference on Innovative Foundry Materials and Technologies, Opatija, Croatia, 2005

S. Konjicija, Z. Avdagić: „**Adaptive Mutation in Genetic Algorithm with Binary Coding**“, 17th European Meeting on Cybernetics and Systems Research, EMCSR 2004, Vienna, Austria, 2004

A. Akšamović, S. Konjicija: „**Numerical Algorithm for Measurement of Angle Phase Shift for Sine Signal**“, 11th IEEE International Conference on Electronics, Circuits and Systems, ICECS 2004, Tel-Aviv, Israel, 2004

Z. Avdagić, S. Konjicija: "**Design of Robot Controller Based on Evolutionary Algorithms and Neural Networks**", 6th World Multiconference on Systemics, Cybernetics and Informatics, SCI 2002, Orlando, Florida, U.S.A., 2002

S. Konjicija, Z. Avdagić, W. Baer: "**Application of Evolutionary Algorithms for Adjusting Neural Network Controller**", 16th European Meeting on Cybernetics and Systems Research, EMCSR 2002, Vienna, Austria, 2002

Other publications

S. Konjicija, Z. Avdagić: „**Effects of Adaptive Mechanisms on the Performance of Genetic Algorithm Used for Solving Dynamic Problems**“, 20th International Symposium on Information, Communication and Automation Technologies, ICAT 2005, Sarajevo, Bosnia and Herzegovina, 2005

A. Akšamović, S. Konjicija: „**Microcontrollers in Education in Secondary Schools for Electricians**“, 27th International Convention, MIPRO 2004, Opatija, Croatia, 2004

A. Akšamović, S. Konjicija: "**Development Tools For Embedded Systems**", EE Education in the 21st Century in the South-Eastern Europe (+Greece and Turkey), Sarajevo, Bosnia and Herzegovina, 2003

A. Akšamović, S. Konjicija: „**Necessity and possibility of studying microcontrollers in secondary schools for electricians in Federation of Bosnia and Herzegovina**“, BIHTEL2002, Sarajevo, Bosnia and Herzegovina, 2002

S. Konjicija, E. Čelebičić: „**Experiences in implementation of e-banking solutions in Bosnia and Herzegovina**“, 2nd Yugoslav Symposium on Electronic Commerce and Electronic Business, E-Trgovina 2002, Palić, Yugoslavia, 2002

Z. Avdagić, S. Konjicija, F. Dervišbegović: "**Genetic Algorithms in Optimization of Engineering Problems**", 18th Symposium on Information and Communication Technologies, IKT 2001, Sarajevo, Bosnia and Herzegovina, 2001

M. Šehu, S. Konjicija, B. Hadžić: „**Remote Control System in Regional Control Center/Distribution Control Center Sarajevo realized by donation of Malaysian Electrical Power Utility**“, 4th Symposium of B-H Committee of CIGRÉ, Neum, Bosnia and Herzegovina, 1999

Languages

English (C1), German (B2), Bosnian/Croatian/Serbian (native)