



Krzysztof Juszczyszyn

Curriculum Vitae

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Contact

Krzysztof Juszczyszyn PhD.

Assistant Professor

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Research Interests

- Technology-based social networks
- Network dynamics
- Semantic Web applications
- Ontologies, ontology merging and alignment
- Knowledge management in Web systems
- Small worlds and social networks dynamics
- Conflict resolution strategies in agent systems
- Social software applications in information systems
- Emergent information networks

Former research interests

- Formal Security Models
- Mandatory Access Control Policies
- Information flow modeling
- Modeling discrete systems with high-level Petri nets
- Security of Web Information Systems

Education

- 1988-1992: High school, Wroclaw, Poland
- 1992-1997: Studies in computer science at Wroclaw University of Technology, Faculty of Electronics (Field of study: Computer Science, Specialization: Computer Networks). Final grade: Very Good, distinguished.
- 1997: M. S. in Computer Science, Wroclaw University of Technology, distinguished ("*Lotus Notes Groupware Applications in Banking Industry*").
- 2000: PhD in Computer Science, Wroclaw University of Technology, ("*Access Control Management in Information Systems*"). Supervisor: Prof. A.Grzech).

Professional Experience

- 12 years (Wroclaw University of Technology, from 2001 as an Assistant Professor).

Employment:

- **1997-now:**
- **Wroclaw University of Technology, Institute of Information Science and Engineering**
 - **1997-2000: Research Assistant;**
 - **from 2001: Assistant Professor;**
 - **2007-2008: v-ce Director for Research and Development**
- 2004-2006: Wroclaw High School of Finances and Management (Guest Lecturer)
- 2001-2002: The State School of Higher Professional Education, Legnica (Lecturer)
- 2001: Wroclaw School of Banking (Guest Lecturer)

Publications

- Over 70 articles in local and international conference proceedings, journals and research reports (from 1997 to 2009).

2010:

Grzegorz Kolaczek, Krzysztof Juszczyzyn: Smart Security Assessment of Composed Web Services. *Cybernetics and Systems* 41(1): 46-61 (2010).

Grzegorz Kolaczek, Krzysztof Juszczyzyn: Deontic Logic-based Framework for Ontology Alignment in Agent Communities. *J. UCS* 16(1): 178-197 (2010)

2009:

Juszczyzyn K., Musiał A., Musiał K., Bródka P., Molecular Dynamics Modelling of the Temporal Changes in Complex Networks, IEEE Congress on Evolutionary Computation, Trondheim, Norway, 2009, IEEE Computer Society Press (to appear in May 2009).

Juszczyzyn K., Musiał K., Motif-based Analysis of Social Position Influence on Interconnection Patterns in Complex Social Network, 1st Asia Conference on Intelligent Information and Database Systems, IEEE Computer Society Press, Vietnam, 1-3 April 2009.

Juszczyzyn K., Musiał K., Motif Analysis and the Periodic Structural Changes in an Organizational Email-based Social Network, *Int. Journal of Virtual Communities and Social Networking*, 1(2), 22-35, April-June 2009.

Musiał K., Juszczyzyn K., Kazienko P., Gabrys B., Patterns of Interactions in Complex Social Networks based on Coloured Motifs Analysis, 15th International Conference on Neuro- Information Processing, Springer LNCS, New Zealand, 2008 (to appear in March 2009).

Juszczyzyn K., Musiał K., Kazienko P., Gabrys B., Temporal Changes in Local Topology of an Email-Based Social Network, *Computing and Informatics*, vol 28 (1).

Bernadetta Mianowska, Marcin Maleszka, Krzysztof Juszczyzyn: Analysis of Social Network's Structural Properties in Huge Community Portal. *ICCCI (SCI Volume)* 2009: 135-146

2008:

Juszczyszyn K., Kazienko P., Musiał K., Gabrys B., Temporal Changes in Connection Patterns of an Email-based Social Network, 2nd Workshop on Collective Intelligence in Semantic Web and Social Networks (CISWSN 2008), IEEE/WIC/ACM Joint International Conference on Web Intelligence and Intelligent Agent Technology 2008, Sydney, Australia, 9-12 December 2008, IEEE Computer Society Press.

Kolaczek G., Juszczyszyn K., Attack Pattern Analysis Framework for Multiagent Intrusion Detection System, International Journal of Computational Intelligence Systems, vol. 1(3), Atlantis Press, Paris, 2008.

Musiał K., Juszczyszyn K., Method For Evaluating Organizational Structure on the Basis of Social Network Analysis, Foundation of Control and Management Sciences, vol. 1/ 2008. (to appear)

Juszczyszyn K., Kazienko P., Musiał K., Local Topology of Social Network Based on Motif Analysis, 12th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems, Springer Lecture Notes in Artificial Intelligence, 3-5 September 2008, Zagreb, Croatia.

Kazienko P., Musiał K., Juszczyszyn K., Recommendation of Multimedia Objects Based on Similarity Of Ontologies, 12th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems, Springer Lecture Notes in Artificial Intelligence, 3-5 September 2008, Zagreb, Croatia.

Juszczyszyn K., Kolaczek G., Web-Based Social Network Approach to Information Fusion, The 8th International FLINS Conference on Computational Intelligence in Decision and Control, Madrid, Spain, September 21-24, 2008.

Kolaczek G., Juszczyszyn K., Subjective Logic - Based Framework For Rating And Composition Of Web Services, The 8th International FLINS Conference on Computational Intelligence in Decision and Control, Madrid, Spain, September 21-24, 2008.

2007:

Jung J.J., Juszczyszyn K., N. T. Nguyen, Centrality Measurement on Semantically Multiplex Social Networks: Divide-and-Conquer Approach, International Journal of Intelligent Information and Database Systems, 2(2), 2007.

Kolaczek G., Juszczyszyn K., Traffic and Attack Pattern Analysis for Multiagent Distributed Intrusion Detection System, International Conference on Intelligent Systems and Knowledge Engineering. ISKE 2007, Chengdu, P.R. China, Eds Tianrui Li, Yang Xu and Da Ruan. Paris : Atlantis Press, 2007. pp. 733-739,.

Juszczyszyn K., Modeling the Activity of an Multiagent System with Evolving Metadata. The 1st KES Symposium on Agent and Multi-Agent Systems – Technologies and Applications, Springer Lecture Notes in Computer Science, vol. 4496, pp. 73-81, Wrocław, Poland, 2007.

Juszczyszyn K., Kolaczek G. Attack pattern ontology for network traffic anomalies and intrusion detection. 16th International Conference on Systems Science, Wrocław, Poland, 2007, pp. 238-246.

2006:

Juszczyszyn K., Jarmal P., Sawko R., Stelmach P., Szwarc J., Ontology-Based Approach to Situation Awareness Framework in Robocode Environment, 27th International Scientific School ISAT'2006, Szklarska Poreba, Poland, 13-15 September 2006.

Juszczyszyn K., Towards a Computational Framework for Modeling Semantic Interactions in Large Multiagent Communities. 10th International Conference on Knowledge-Based Intelligent Information & Engineering Systems KES 2006, Springer Lecture Notes in Artificial Intelligence, Bournemouth, UK, 2006.

Juszczyszyn K., Kolaczek G. Assessing the Uncertainty of Communication Patterns in Distributed Intrusion Detection System. 10th International Conference on Knowledge-Based Intelligent Information & Engineering Systems KES 2006, Springer Lecture Notes in Artificial Intelligence, Bournemouth, UK, 2006.

Juszczyszyn K., Nguyen N.T., Kolaczek G., Grzech A., Pieczynska A., Katarzyniak R. Agent-based Approach for Distributed Intrusion Detection System Design. International Conference on Computational Science ICCS 2006, Springer Lecture Notes in Computer Science, Reading, United Kingdom, 2006.

2005:

Kolaczek G., Pieczynska-Kuchtiak A., Juszczyszyn K., Grzech A., Katarzyniak R. Nguyen N.T. A Mobile Agent Approach to Intrusion Detection in a Network Systems. 9th International Conference on Knowledge-Based Intelligent Information & Engineering Systems KES 2005, Springer Lecture Notes in Artificial Intelligence, 3682 (2005) Melbourne, Australia, 514-519.

Juszczyszyn K.: Virtual Communities and the Alignment of Web Ontologies. Chapter in book: Dasgupta S. (ed.) The Encyclopedia of Virtual Communities and Technologies. Idea Group Publishing, Hershey PA, USA, 2005.

Juszczyszyn K., Sachse P.: Assessing Trust in the Semantic Web. Systems Science Journal, 30(1), 2004, pp. 99-114.

Juszczyszyn K., Zalewska M. A Perspective of Using World Wide Web as the Environment for Business Process Modeling, Systems, IV International E-commerce Conference ECOM-04, Gdańsk, Poland, 2005.

Juszczyszyn K., Kołaczek G. Data Fusion Framework for Multiagent Intrusion Detection System, 26th International Scientific School ISAT'2005, Szklarska Poreba, Poland, 21-23 September 2005.

2004:

Juszczyszyn K.: Knowledge Sharing in Agent's Society with Multiple Ontologies. Chapter in book: Nguyen T. (ed.) International Series on Advanced Intelligence vol.10, Intelligent Technologies for Inconsistent Information Processing. Advanced Knowledge International Ltd., Australia, 2004, pp. 129-144.

Juszczyszyn K.: A Subjective Logic-Based Framework for Aligning Multiple Ontologies. 8th International Conference on Knowledge-Based Intelligent Information & Engineering Systems KES 2004, Workshop on "Multi-agent systems, ontologies, and conflict resolution". Springer Lecture Notes in Artificial Intelligence 3214, Wellington, New Zealand, 2004, pp. 1194-1200.

Juszczyszyn K., Sachse P. Open Rating System Based on Web Services, 15th International Conference on Systems Science, Wrocław, Poland, 2004, pp.165-172.

Juszczyszyn K. Aligning Ontologies in Multiple Agent's Society, 15th International Conference on Systems Science, Wrocław, Poland, 2004, pp.139-146.

Juszczyszyn K., Rating Model for DAML-S Web Services, ISAT2004, Information Systems Application and Technology'04, Szklarska Poręba, Poland, 2004, pp.119-126.

Juszczyszyn K., Sachse P. Model zaufania dla systemów webowych, 2 Krajowa Konferencja Technologie Informacyjne, Gdańsk, Poland, 2004, pp. 257-264, (A Trust Model for Web Systems, in Polish).

Juszczyszyn K., Franczak M. Wykorzystanie języka RDF do opisu i przeszukiwania zbioru tekstów literackich, 2 Krajowa Konferencja Technologie Informacyjne, Gdańsk, Poland, 2004, pp. 899-906. (A Method for RDF-based Description of Literary Texts, in Polish).

Before 2004 (selected works only):

Juszczyszyn K. Verifying Enterprise's Mandatory Access Control Policies with Coloured Petri Nets, 12th International IEEE Workshop on Enabling Technologies, Linz, Austria, IEEE Computer Society Press 2003, pp. 184-190.

Juszczyszyn K., Koprowska M., Ontologies and Knowledge Management in Web Systems, Information Systems Application and Technology, ISAT2003, Szklarska Poręba, 2003, pp. 116-122.

Juszczyszyn K., Koprowska M. Managing Information Systems with Intelligent Web Services, Information Systems Application and Technology, ISAT 2002, Wrocław 2003, pp. 174-182.

Juszczyszyn K., Coloured Petri net-based information flow security model. Proceedings of the 14th International Conference on Systems Science. Wrocław, 2001. Vol.3, pp. 86-93.

Juszczyszyn K., Information flow security analysis using coloured Petri nets. Information Systems Architecture and Technology, ISAT 2001, Szklarska Poręba, 2001, pp. 268-275.

Juszczyszyn K., Modelling Information Flow Security with Coloured Petri Nets. Modelling and Simulation of Systems. Proceedings of the 35th Spring International Conference. Hradec n. Moravici, Czech Republic, 2001, pp. 159-164.

Juszczyszyn K., Kołaczek G. Analysis and Evaluation of Network Security Policies. Proceedings of the Second International Conference on Managing Enterprises. ME '99. Newcastle, Australia, 1999. pp. 225-229.

Editing

- Associate Editor, International Journal of Virtual Communities and Social Networking (IGI Global).
- Guest Editor, International Journal of Virtual Communities and Social Networking, Special Issue on *Formation and Dynamics of Virtual Communities*, 2009.
- Guest Editor, International Journal of Intelligent Information and Database Systems, Special Issue on: *Knowledge Dynamics in Semantic Web and Social Networks*, 2007.
- Guest Editor, Journal of Universal Computer Science: *A selection of the best papers from the workshop "International Workshop on Collective Intelligence for Semantic and Knowledge Grid"*, ICCS 2007 conference in Beijing, China. Special Issue, 2008.

Reviewing and Project Evaluation

- Expert and Project Reviewer, National Center for Research and Development, Warsaw, Poland (Area: Information Technologies).
- Project Assessor, Upper Silesia Regional Operational Programme 2007-2013, Area: Information Society – e-Services.
- Regional Panel Expert, Interregional Polish-Czech Cooperation Programme 2007-2013.
- Project Evaluator, Slovak Research and Development Agency, PhD Thesis Project proposals evaluation, Bratislava, Slovakia, 2008.
- Project Evaluator, European Commission's Directorate General Information Society and Media - evaluation of FP7 Call1 proposals for Strategic Objective 4.2 (Intelligent Content and Semantics), Brussels, Belgium, 2007.
- Panel Expert and Panel Secretary, National Foresight Program "Poland 2020" (Thematic Panel "Information Access"), Warsaw, Poland, 2007-2008.
- Expert Evaluator and Reviewer, FIT-IT program (Semantic Systems call), Österreichische Forschungsförderungsgesellschaft mbH, Vienna, Austria, 2006.
- Member of Reviewer Board of the *International Journal of Virtual Communities and Social Networking*.
- Member of Reviewer Board of the *International Journal of Knowledge-based and Intelligent Engineering Systems*, IOS Press.
- Ad Hoc Reviewer for the Editorial Review Board of the *Information Resources Management Journal* (Idea Group Inc.)
- Reviewer, IEEE Internet Computing, Special Issue - *Semantic-Based Knowledge Management*.
- Reviewer, IEEE Transactions on Knowledge and Data Engineering.
- Building the Knowledge Society On the Internet - Sharing and Exchanging Knowledge in Networked Environments, ed: Ettore Bolisani, IGI Group, 2007.
- KES'2004, 8th International Conference on Knowledge-Based Intelligent Information & Engineering Systems, Wellington, New Zealand, September 2004.
- SoftCOM'04 International IEEE Conference on Software, Telecommunications and Computer Networks, Split (Croatia) - Venice (Italy), 2004.
- KES'2005, 9th International Conference on Knowledge-Based Intelligent Information & Engineering Systems, Melbourne, Australia, September 2005.
- 5th IFIP Conference e-Commerce, e-Business, and e-Government (I3E'2005), October 2005, Poznan, Poland.
- Knowledge and Information Management in Computer Communication Systems - KIMCCS workshop in the International Conference on Computational Science Reading (ICCS 2006), UK, May, 2006.
- KES'2006, 10th International Conference on Knowledge-Based Intelligent Information & Engineering Systems, Bournemouth, Great Britain, October 2006.
- International Conference on Enterprise Information Systems and Web Technologies (EISWT-07). 9-12 July 2007 Orlando, FL, USA.
- 1st KES International Symposium on Agent and Multi-Agent Systems – Technologies and Applications (KES-AMSTA-07), Wroclaw, Poland, May 17-18, 2007.
- KES'2007, 11th International Conference on Knowledge-Based Intelligent Information & Engineering Systems, Vietri sul Mare, Italy, September 2006.

Participation in funded grants:

- 2010-2013: Future Internet Engineering, Task 3.4 leader, Polish Operational Programme "Innovative Economy" grant no. POIG.01.01.02-00-045/09 (10.5M EUR).
- 2009-2012: IT SOA – Service Oriented Architectures, Task 6.2 leader, Polish Operational Programme "Innovative Economy" grant no. POIG.01.03.01-00-008/08 (9.8M EUR).
- 2009-2011: GRASP# - Groups, Relationships and Activities of Suspected Persons (1.1M EUR)

- 15.09.2006-15.12.2006: *Knowledge Dynamics in Interconnection Environments*. Individual research grant, Universidad de Murcia, Spain (Fundacion Seneca: Mobility Programme for Visiting Researchers).
- 2005-2007: Applying Multiagent Systems to Intrusion Detection, Polish State Committee for Scientific Research and Development grant 1576/T11/2005/29, (0.5M EUR).
- 2005: Analysis and Knowledge Management Algorithms in Web-based Systems (Wroclaw University of Technology internal grant 341800).
- 2003: Search Algorithms for Semantic Web (Wroclaw University of Technology internal grant 331915).

Conference & Workshop Activities

Member of the Program Committee:

- 4th International KES Symposium on Agents and Multi-agent Systems - Technologies and Applications, 23-25 June 2010, Gdynia, Poland
- Session Chair and organizer: 1st International Conference on Computational Collective Intelligence - Semantic Web, Social Networks & Multiagent Systems, 5-7 October, 2009 Wrocław (Poland). Special Session: *Dynamics of Real-World Social Networks*.
- 3rd International KES Symposium on Agents and Multi-agent Systems – Technologies and Applications, Uppsala, Sweden, 2009.
- Invited Session on *Emerging Technologies on Knowledge Annotation and Sharing* (ET-KAS 2007), International Conference on Knowledge-based and Intelligent Information & Engineering Systems (KES 2007) September 12-14 2007, Italy.
- Workshop on *Collective Intelligence for Semantic and Knowledge Grid* (CISKGrid) on International Conference on Computational Science 2007, Beijing, China, May 27-30, 2007.
- 10th Int. Conference on Knowledge Based Intelligent Information & Engineering Systems (KES2006), Invited Session on *Communicative Intelligence*, Bournemouth, UK, 9-11 October 2006.
- 10th Int. Conference on Knowledge Based Intelligent Information & Engineering Systems (KES2006), Invited Session on *Knowledge Processing in Intelligent and Cognitive Communicative Systems*, Bournemouth, UK, 9-11 October 2006.

Member of the Organizing Committee:

- Organizer: Symposium on Real-World Complex Networked Systems at the Eighth International Conference of Computational Methods in Sciences and Engineering, 3-8.10.2010, Kos, Greece.
- Organizer: 3rd Workshop on Collective Intelligence in Semantic Web and Social Networks at the IEEE/WIC/ACM Joint International Conference on Web Intelligence and Intelligent Agent Technology, August 31 - September 3, 2010, Toronto, Canada.
- Organizing Committee Chair: 7th Conference on Knowledge Engineering and Expert Systems (Inżynieria Wiedzy I Systemy Ekspertowe), Wrocław, Poland, 2009.
- 2nd Workshop on Collective Intelligence in Semantic Web and Social Networks (CISWSN 2008) IEEE/WIC/ACM Joint International Conference on Web Intelligence and Intelligent Agent Technology Sydney, Australia, 9-12 December 2008.
- Invited Session on *Emerging Technologies on Knowledge Annotation and Sharing* (ET-KAS 2007), International Conference on Knowledge-based and Intelligent Information & Engineering Systems (KES 2007) September 12-14 2007, Italy.
- Publicity Chair: IEA/AIE 2008: The 20th International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems, Zakopane, Poland, 2008.
- Publicity Chair: 1st KES International Symposium on Agent and Multi-Agent Systems – Technologies and Applications (KES-AMSTA-07), Wrocław, Poland, May 17-18, 2007.
- 22nd IFIP TC 7 Conference on System Modeling and Optimization, Torino, Italy, July 18-22, 2005 - invited session *Inconsistency and Uncertainty Resolution in Distributed Information Systems* (session chairman and co-organizer).
- 25th International Scientific School ISAT'2004, Szklarska Poręba, Poland.
- 24th International Scientific School ISAT'2003, Szklarska Poręba, Poland,
- 23rd International Scientific School ISAT'2002, Karpacz, Poland,

- 1st IFIP Workshop on Internet Technologies, Applications, and Societal Impact - WITASI'02, Wroclaw, Poland, 2002.
- 22nd International Scientific School ISAT'2001, Szklarska Poręba, Poland,

Teaching

Courses Taught (1997-2008):

- Information Systems
- Operating Systems
- Algorithms and Data Structures
- Graph Theory
- Applied Algebra and Cryptography
- Database Systems
- Computer Networks
- Introduction to Cognitive Sciences
- Advanced Artificial Intelligence

Dissertation supervision:

- Member of the PhD Thesis Tribunal of Mr. Rafael Toledo Moreo, Murcia University, Spain, 3rd of March 2006. (Thesis: *A High Integrity Navigation System for Vehicles in Unfriendly Environments*)
- Member of the PhD Thesis Tribunal of Mr. Jose Santa Lozano, Murcia University, Spain, 20th of January 2009. (Thesis: *Vertical Telematic Architecture for Service Deployment in Intelligent Transportation Systems*)
- M.S. Supervisor - over 80

Awards

2001: Wroclaw University of Technology – Rector's Award for Scientific Activities.

2003: Wroclaw University of Technology, Computer Science and Management Faculty – Dean's Award for Scientific and Teaching Activities.

2004: Wroclaw University of Technology, Computer Science and Management Faculty – Dean's Award for Scientific and Teaching Activities.

2006: Wroclaw University of Technology – Rector's Award for Scientific Activities.

2008: Wroclaw University of Technology – Rector's Award for Scientific Activities.

Skills

Languages:

- English: *Very good*
- German, Russian: *Basic*

Driving license

In the computer science field:

- UNIX/Linux, MS Windows, DOS environment knowledge and experience.
- Ontology modeling: Protege2000, RDF, OWL.
- Math software: Mathematica, Matlab.
- Programming languages: C++, JAVA, Pascal.

Interests

- Astronomy and astrophysics
- History, archeology

- Cognitive psychology
- Trekking
- Science-Fiction