

CURRICULUM VITAE



Adrian Horzyk, PhD, Prof.

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OBJECTIVE:

Seeking for cooperation in the scientific research and practical business applications in the field of artificial intelligence, cognition systems, data mining, knowledge engineering, machine learning, artificial associative neural systems, and their applications.

CAREER STATEMENT:

A well-presented, self-motivated, dynamic, and confident computer science postdoctoral graduate (obtained habilitation – the highest scientific degree offered in Poland) who has extensive knowledge of artificial intelligence, machine learning, data mining, cognition systems, and knowledge engineering. Can organize, supervise, and conduct research projects, developing computer applications for practical problems. Possess excellent listening and communication skills, along with the ability to communicate complex information about advanced research subjects. Have multitasking, interpersonal, and organizational skills. Aims at the further career, professional development, and interaction with researchers who will cooperate to make progress in research and careers.

EDUCATION:

- Habilitation (Dr hab.) in Computer Science in Field of Artificial Intelligence and Knowledge Engineering at AGH University of Science and Technology in Krakow, Faculty of Electrical Engineering, Automatics, Computer Science and Biomedical Engineering in 2014, Dissertation: *Artificial Associative Systems and Associative Artificial Intelligence*.
- PhD in Computer Science at AGH University of Science and Technology in Krakow, Faculty of Electrical Engineering, Automatics, Computer Science and Electronics with honors in 2001, Dissertation: *New methods of training neural networks without feedback*, Advisor: Prof. Dr hab. ing Ryszard Tadeusiewicz.
- Master's degree in Computer Science at Jagiellonian University, Department of Mathematics and Physics in 1997.
- High School in Czeski Cieszyn, baccalaureate with honors in 1991.

- Primary School in Czeski Cieszyn in 1987.

ACADEMIC APPOINTMENTS:

- Associate Professor at the AGH University of Science and Technology in the Faculty of Electrical Engineering, Automatics, Computer Science and Biomedical Engineering in the Department of Automatics and Biomedical Engineering, 30-059 Krakow, Mickiewicza Av. 30, since 2013 till now.
- Assistant Professor at the AGH University of Science and Technology in the Faculty of Electrical Engineering, Automatics, Computer Science and Electronics in the Department of Automatics and Robotics, 30-059 Krakow, Mickiewicza Av. 30, in years 2002 – 2013.
- Lecturer at the University School of Economics and Social Sciences in Kety in years 2004 – 2006.
- Head of the student's science club at the Krakow University of Technology in Faculty of Engineering and Robotics in years 1999 – 2000.
- Author of 48 scientific publications
- Supervisor of a PhD thesis under way
- Master's thesis supervisor: 44 finished + 14 already under way
- Engineer's thesis supervisor: 14 finished + 2 already under way

PROFESSIONAL MEMBERSHIPS IN ORGANIZATIONS, ASSOCIATIONS AND SOCIETIES:

- Board Member of the Polish Neural Network Society (PTSN) since 2011. PTSN deals with the popularization and promotion of modern computational methods for artificial intelligence, neural networks and soft computing, and organizing ICAISC conferences.
- Co-founder and member of the Polish Association of Artificial Intelligence (PSSI) since 2009. PSSI belongs to European Coordination Committee on Artificial Intelligence. It deals with the popularization of computational techniques in the field of artificial intelligence.
- Member of the Computational Linguistics Group in Krakow since 2005.

ACHIEVEMENTS, AWARDS, AND DISTINCTIONS:

- Award of the Rector AGH University of Science and Technology for the scientific achievements in years: 2001, 2003, 2005, 2008, 2009, and 2013.
- PhD dissertation with honors in 2001.
- Took second place in regional mathematical competitions in 1990.
- Finalist in competitions of mathematics, physics, chemistry, computer science, history, Polish language, poetry, literature, and Red Cross in years 1987-1994.

RESEARCH INTERESTS:

- Artificial Associative Systems and Associative Neural Graphs;
- Neural networks, neurons, receptors, interneuronal space, synaptic efficiencies, synaptic conductance and synaptic changes modeling;

- Knowledge engineering, automatic associative formation and use;
- Cognitive systems and biologically inspired intelligent systems;
- Machine learning, pattern recognition, classification and analysis;
- Computational intelligence, soft-computing;
- General Artificial Intelligence methods and systems;
- Chatbots (chatterbots), computational linguistics and linguistic intelligent systems.

COURSES TAUGHT FOR UNDERGRADUATE STUDENTS:

- Fundamentals of Computer Science
- Artificial Intelligence
- Databases
- Fundamentals of Conducting Negotiations
- Diploma Seminar
- Team Project

COURSES TAUGHT FOR GRADUATE STUDENTS:

- Computational Intelligence.
- Methods of Artificial Intelligence
- Methods of Knowledge Engineering
- Associative Computations in Artificial Associative Systems
- Diploma Seminar

COURSES TAUGHT FOR PHD STUDENTS:

- Biocybernetics.

INVITED LECTURES GIVEN AT CONFERENCES AND SEMINARS

- "*Contextual generalizing of robot control step sequences using associative neural graphs*" - the invited talk at the BIT's International Congress WCR 2015 w Shenyang, China, and during the 14-th China International Equipment Manufacturing Exposition, 2015-08-30 - 2015-09-02.
- "*Innovative Types and Abilities of Neural Networks Based on Associative Mechanisms and a New Associative Model of Neurons*" - the invited plenary talk at the International Conference ICAISC 2015, Zakopane, Poland, 2015.
- "*Neuro-associative computational models in artificial intelligence for the purposes of the formation of knowledge and associations*", plenary talk at the Polish scientific conference for "*The irrationality network*", Jagiellonian University, Institute of Religious Studies, Krakow, Poland, 2013.
- "*How to Conduct Negotiations Efficiently and with Satisfaction?*", Krakow University of Economics, Days of Negotiations, the invitation of Scientific Club of Psychological Science of the University of Economics, Krakow, 2011.
- "*New Adaptive Mechanisms of Ontogenic Neural Network*", University of Lodz, 2005, the invitation of the Head of Department Prof. Andrzej Nowakowski.

- “*New methods of training neural networks without feedback*”, Technical University of Czestochowa, 2001, the invitation of the Head of Department Prof. Leszek Rutkowski.
- “*Artificial Neural Networks*”, the University of Technology by Dr Zbigniew Mrozek’s invitation, Krakow, 1996.

REVIEWER FOR THE FOLLOWING JOURNALS:

- Journal of Computing and Informatics since 2015
- Journal of Personality since 2015
- Image Processing and Communication since 2015
- Journal of Computing and Informatics since 2009
- Polish Society of Computer Science since 2009
- Acta Geophysica since 2009
- Elsevier Neurocomputing since 2004
- IEEE Transactions on Neural Network since 2004

PARTICIPATION IN GRANTS AND RESEARCH PROJECTS:

- Key Investigator in the project No DEC-2016/21/B/ST7/02220 granted by the Polish National Science Centre, entitled “*Development of effective mechanisms for robot perception using motivated learning and self-organizing associative memory*” in years 2017-2020.
- Principal Investigator in the project No 4 T11C 025 24 granted by the Polish National Committee for Research Projects, entitled “*Efficient classification based on a new type of ontogenic neural networks*” in years 2003-2006.
- Principal Investigator in the project No 4 T11E 031 23 granted by the Polish National Committee for Research Projects, entitled “*The use of artificial intelligence to assist in the interpretation of biomedical quality of acoustic signals*” in years 2003-2005.
- Key Investigator in the PhD project No 8 T11C 002 19 granted by the Polish National Committee for Research Projects, entitled “*New methods of training neural networks without feedback*” in years 2000-2001.

CHAIR AND PROGRAM COMMITTEE MEMBER OF INTERNATIONAL CONFERENCES AND COMPETITIONS:

- Chairman and member of the program committee and reviewer at 12th International Conference Artificial Intelligence and Soft Computing ICAISC 2013, Zakopane, Poland in 2013.
- Chairman of Diploma Majoring Committee in the field of Biomedical Engineering since 2014.
- Chairman and member of the program committee and reviewer at 12th International Conference Artificial Intelligence and Soft Computing ICAISC 2013, Zakopane, Poland in 2013.
- Expert of Information Processing Centre of Polish National Research Institute since 2013.

- Expert and member of the Project Evaluation Committee in the Ministry of Economy evaluating projects under the Operational Programme Innovative Economy in years 2007-2013.
- Member of the Polish Engineering Competition Jury EBEC 2012 in Cracow.
- Member of the program committee and reviewer at 11th International Conference Artificial Intelligence and Soft Computing ICAISC 2012, Zakopane, Poland in 2012.
- Chairman of the Cracow Engineering Competition BEC 2010 organized by BEST Cracow at AGH University of Science and Technology in 2010.
- Member of the program committee and reviewer at International Conference Artificial Intelligence and Soft Computing ICAISC 2010, Zakopane, Poland in 2010.
- Reviewer in competitions organized by Polish Society of Computer Science (PTI) since 2009.
- Reviewer at 18th International Conference on Artificial Neural Networks ICANN 2008, Prague, Czech Republic in 2008.
- Member of the program committee and reviewer at International Conference Artificial Intelligence and Soft Computing ICAISC 2008, Zakopane, Poland in 2008.
- Member of the program committee and reviewer at International Conference Artificial Intelligence and Soft Computing ICAISC 2006, Zakopane, Poland in 2006.
- Chairman at Artificial Intelligence and Applications AIA 2005, Innsbruck, Austria in 2005.
- Member of organizing committee and reviewer at Conference of Artificial Intelligence in Biomedical Engineering SIIB 204, Cracow, Poland in 2004.
- Chairman at International Conference Advanced Computer Systems ICACS 2002, Miedzyzdroje, Poland in 2002.

SCHOLARSHIPS, INTERNSHIPS AND COURSES:

- Training Spin Out/Off "Enterprising Scientist" in 2011.
- Training Workshop entitled "Trading as a game. How to build relationships with customers, based on their needs and their distance to the harsh licks?" organized by OSH Contract in 2005.
- International Course of German Language and Culture (scholarship) at the Karls-Ruprechts Universität in Heidelberg in Germany in 1996.
- Methodological course in the area of computer science for high-school teachers at the AGH University of Science and Technology in 1995-1996.

SELECTED PUBLICATIONS:

1. J. A. Starzyk, J. Graham, **A. Horzyk**, Trust in Motivated Learning Agents, IEEE Xplore, In: 2016 IEEE Symposium Series on Computational Intelligence, Greece, Athens: Institute of Electrical and Electronics Engineers, Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA, 2016, ISBN 978-1-5090-4239-5, pp. 1-8, DOI: 10.1109/SSCI.2016.7850027.
2. **A. Horzyk**, J. A. Starzyk and Basawaraj, Emergent creativity in declarative memories, IEEE Xplore, In: 2016 IEEE Symposium Series on Computational Intelligence, Greece, Athens: Institute of Electrical and Electronics Engineers,

- Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA, 2016, ISBN 978-1-5090-4239-5, pp. 1-8, DOI: 10.1109/SSCI.2016.7850029.
3. **A. Horzyk**, Human-Like Knowledge Engineering, Generalization and Creativity in Artificial Neural Associative Systems, Springer-Verlag, AISC 11156, ISSN 2194-5357, ISBN 978-3-319-19089-1, ISBN 978-3-319-19090-7 (eBook), DOI 10.1007/978-3-319-19090-7, Springer, Switzerland, 2016, pp. 39-51
 4. **Horzyk, A.**, *Innovative Types and Abilities of Neural Networks Based on Associative Mechanisms and a New Associative Model of Neurons*, ICAISC 2015, Springer Verlag, LNAI, 2015, pp. 26-38, invited plenary talk.
 5. **Horzyk, A.**, *Human-Like Knowledge Engineering, Generalization and Creativity in Artificial Neural Associative Systems*, Springer-Verlag, AISC 11156, ISSN 2194-5357, 2015.
 6. Tadeusiewicz, R., **Horzyk, A.**, *Man-Machine Interaction Improvement by Means of Automatic Human Personality Identification*, Springer-Verlag, LNCS 8838, 2014, pp. 278-289, invited plenary talk.
 7. **Horzyk, A.**, *How Does Generalization and Creativity Come into Being in Neural Associative Systems and How Does It Form Human-Like Knowledge?*, Elsevier, Neurocomputing, 2014, pp. 238-257, DOI: 10.1016/j.neucom.2014.04.046.
 8. **Horzyk, A.**, *How Does Human-Like Knowledge Come into Being in Artificial Associative Systems*, Proc. of the 8-th International Conference on Knowledge, Information and Creativity Support Systems, Krakow, Poland, 2013, 189-200.
 9. Tadeusiewicz, R., **Horzyk, A.**, *Man-Machine Interaction Improvement by Means of Automatic Human Personality Identification*, Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen (Eds.), Springer-Verlag, LNCS 8104, 2013, pp. 10, invited plenary talk.
 10. **Horzyk, A.**, *Artificial Associative Systems and Associative Artificial Intelligence* (Polish), Academic Publishing House EXIT, Warsaw, 2013, habilitation monograph, 280 pages.
 11. Tadeusiewicz, R., Rutkowski, L., Szaleniec M., **Horzyk, A.**, Strzelecki M. (eds.): Supplement – Compendium of Neural Networks (language: Polish) in Biomedical Engineering. Basics and Applications. Neural Networks in Biomedical Engineering, Tadeusiewicz, R., Korbicz, J., Rutkowski, L., Duch, W. (eds.), Vol. 9, eds., EXIT, Warsaw, 2013.
 12. **Horzyk, A.**, Gadamer, M., *Associative Text Representation and Correction*, Springer-Verlag, Berlin Heidelberg, LNAI 7894, 2013, pp. 76-87.
 13. Gadamer, M., **Horzyk, A.**, *Text analysis and correction using specialized linguistic habit graphs LHG*, Image Processing and Communication, Vol. 17, No. 4, Bydgoszcz, 2012, pp. 245-250.
 14. **Horzyk, A.**, *Negotiations. Proven Strategies* (Polish), guide in the series of Samo Sedno, ISBN 978-83-7788-168-2, Edgard, Warsaw, 2012.
 15. **Horzyk, A.**, *Information Freedom and Associative Artificial Intelligence*, Springer-Verlag Berlin Heidelberg, LNAI 7267, ISBN 978-3-642-29346-7, 2012, pp. 81-89.

My current h-index after Google Scholar is 8, after Web of Science is 5, and after Research Gate is 5 excluding self-citations.

My current Research Gate score is 9.20.

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