

List of Publications of Dr. Alexei V. Samsonovich

The list below is divided into (A) journal papers, (B) conference proceedings papers and book chapters, (C) selected abstracts, (D) other copyright works, and (E) manuscripts under review or in preparation for submission. Within each group A and B, original research papers are listed separately from all other kinds. All publications listed under A or B are peer-refereed. Three papers [10, 11, 18] mistakenly identified by the Web of Science as reviews are original research papers.

Metrics: Citation Index, Web of Science: 951, Scopus: 1077, Google Scholar: 1814. H-Index, Web of Science: 11, Scopus: 13, Google Scholar: 18, i10-index: 25.

A. Journals

- Original research papers

- [1] Samsonovich, A.V. and Ascoli, G.A. (2014). Universal dimensions of meaning derived from semantic relations among words and senses: Mereological completeness vs. ontological generality. *Computation* 2014, 2 (3): 61-82. <http://dx.doi.org/10.3390/computation2030061> (*Computation* is scheduled to receive indexing in Web of Science in 2015).
- [2] Samsonovich, A.V. (2014). Semantic cross-correlation as a measure of social interaction. *Biologically Inspired Cognitive Architectures*, 7: 1-8. DOI: [10.1016/j.bica.2013.12.001](https://doi.org/10.1016/j.bica.2013.12.001) (*BICA* is indexed in Web of Science and Scopus and is scheduled to receive a JCR Impact Factor at the beginning of 2016)
- [3] Samsonovich, A.V., and Ascoli, G.A. (2013). Augmenting weak semantic cognitive maps with an 'abstractness' dimension. *Computational Intelligence and Neuroscience* 308176: 1-10. DOI: [10.1155/2013/308176](https://doi.org/10.1155/2013/308176). Web of Science citation index: 3.
- [4] Samsonovich, A.V. (2013). Emotional biologically inspired cognitive architecture. *Biologically Inspired Cognitive Architectures*, 6: 109-125. DOI: [10.1016/j.bica.2013.07.009](https://doi.org/10.1016/j.bica.2013.07.009). Web of Science citation index: 2.
- [5] Ascoli, G. A. and Samsonovich, A. V. (2013). A spiking-network cognitive architecture inspired by the hippocampus. *Biologically Inspired Cognitive Architectures*, 3: 13-26. DOI: [10.1016/j.bica.2012.11.002](https://doi.org/10.1016/j.bica.2012.11.002)

- [6] Samsonovic¹, A. V. and Ascoli, G. A. (2010). Principal Semantic Components of Language and the Measurement of Meaning. *PLoS ONE* 5 (6): e10921.1-e10921.17. DOI: [10.1371/journal.pone.0010921](https://doi.org/10.1371/journal.pone.0010921). Web of Science citation index: 4.
- [7] Samsonovich, A. V., De Jong, K. A., and Kitsantas, A. (2009). The mental state formalism of GMU-BICA. *International Journal of Machine Consciousness* 1 (1): 111-130. DOI: [10.1142/S1793843009000116](https://doi.org/10.1142/S1793843009000116)
- [8] Samsonovich, A. V. (2007). Bringing consciousness to cognitive neuroscience: A computational perspective. *Journal of Integrated Design and Process Science* 11 (3): 19-30.
- [9] Samsonovich, A. V. and Ascoli, G. A. (2006). Morphological homeostasis in cortical dendrites. *Proceedings of the National Academy of Sciences of the United States of America* 103 (5): 1569-1574. Web of Science citation index: 35.
- [10] Samsonovich, A. V. and Nadel, L. (2005). Fundamental principles and mechanisms of the conscious self. *Cortex* 41 (5): 669–689. <http://www.u.arizona.edu/~nadel/pdf/Papers%20as%20PDFs/2005%20PDFs/Cortex%2005.pdf> Web of Science citation index: 21.
- [11] Samsonovich, A. V. and Ascoli, G. A. (2005). A simple neural network model of the hippocampus suggesting its pathfinding role in episodic memory retrieval. *Learning & Memory* 12 (2): 193–208. Supplementary Online Material available at http://binf.gmu.edu/~asamsono/sa_lm05_som/. Web of Science citation index: 36.
- [12] Samsonovich, A. V. and Ascoli, G. A. (2005). The conscious self: Ontology, epistemology and the mirror quest. *Cortex* 41 (5): 621–636. Web of Science citation index: 8.
- [13] Samsonovich, A. V. and Ascoli, G. A. (2005). Statistical determinants of dendritic morphology in hippocampal pyramidal neurons: A hidden Markov model. *Hippocampus* 15 (2): 166–183. Web of Science citation index: 29.
- [14] Samsonovich, A. V. and Ascoli, G. A. (2005). Algorithmic description of hippocampal granule cell dendritic morphology. *Neurocomputing* 65: 253–260. Web of Science citation index: 4.
- [15] Samsonovich, A. V. and Ascoli, G. A. (2003). Statistical morphological analysis of hippocampal principal neurons indicates cell specific repulsion of dendrites from their own cell. *Journal of Neuroscience Research* 71 (2): 173–187. Web of Science citation index: 28.
- [16] De Jong, K. A. and Samsonovich, A. V. (2002). General-purpose meta-cognitive systems: From philosophical ideas to a computational framework.

¹ Correction of the typo in the last name of the first author was published by the journal: <http://www.plosone.org/annotation/listThread.action?root=10875>

Artificial Intelligence (National Academy of Sciences of Ukraine) 2002 (4): 67–73. www.iai.dn.ua/public/JournalAI_2002_4/Razdel1/10_Samsonovich.pdf

- [17] Nadel, L., Samsonovich, A., Ryan, L., and Moscovitch, M. (2000). Multiple trace theory of human memory: Computational, neuroimaging, and neuropsychological results. *Hippocampus* 10 (4): 352–368. Available at [http://www.u.arizona.edu/~nadel/pdf/Papers as PDFs/2000 PDFs/Hippocampus_2000](http://www.u.arizona.edu/~nadel/pdf/Papers_as_PDFs/2000_PDFs/Hippocampus_2000). Web of Science citation index: 217.
- [18] Samsonovich, A. and McNaughton, B. L. (1997). Path integration and cognitive mapping in a continuous attractor neural network model. *Journal of Neuroscience* 17 (15): 5900–5920. Web of Science citation index: 418.
- [19] Hameroff, S. R., Dayhoff, J. E., Lahozbeltra, R., Samsonovich, A. V., and Rasmussen, S. (1992). Models for molecular computation: Conformational automata in the cytoskeleton. *Computer* 25 (11): 30–39. DOI:10.1109/2.166406. Web of Science citation index: 18.
- [20] Samsonovich, A., Scott, A., and Hameroff, S. (1992). Acousto-conformational transitions in cytoskeletal microtubules: Implications for intracellular information processing. *Nanobiology* 1 (4): 457–468.
- [21] Samsonovich, A. V. (1991) Molecular-level neuroelectronics. *Neural Networks World* 1991 (6): 371–382.
- [22] Samsonovich, A. V., Sirotkin, V. V., Ushakov, N. G., and Zaitsev, S. I. (1991). Recent state of the theory of the methods of induced concentration. *Journal De Physique IV*, 1 (C6): 29–34.
- [23] Aristov, V. V., Dreomova, N. N., Firsova, A. A., Kazmiruk, V. V., Samsonovich, A. V., Ushakov, N. G., and Zaitsev, S. I. (1991). Signal formation of backscattered electrons by microinhomogeneities and surface relief in a SEM. *Scanning* 13 (1): 15–22. Web of Science citation index: 18.
- [24] Зайцев С. И., Самсонович А. В. (1990). Обратная задача в электронно-лучевой диагностике: методы наведённой концентрации (Russian). *Известия Академии Наук СССР Серия Физическая* 54 (2): 247–254. Web of Science citation index: 8.
- [25] Зайцев С. И., Самсонович А. В. (1990). Формирование контраста на объёмных неоднородностях при регистрации обратнорассеянных электронов в сканирующем электронном микроскопе (Russian). *Известия Академии Наук СССР Серия Физическая* 54 (2): 237–242. Web of Science citation index: 2.
- [26] Зайцев С. И., Самсонович А. В. (1987). Интерпретация EBIC-контраста на дислокации (Russian). *Известия Академии Наук СССР Серия Физическая* 51 (9): 1587–1594. Web of Science citation index: 5.

- **Essays, reviews, position papers, commentaries, reprints**

- [27] Samsonovich, A. V. (2014). Goal reasoning as a general form of metacognition in BICA. *Biologically Inspired Cognitive Architectures*, 9: 105-122. DOI: 10.1016/j.bica.2014.07.003 (BICA is currently indexed in Web of Science and Scopus and is scheduled to receive a JCR Impact Factor at the beginning of 2016)
- [28] Samsonovich, A. V. (2014). The informational reality commentary on Igor Aleksander and Helen Morton's "Aristotle's Laptop: The Discovery of Our Informational Mind". *International Journal of Machine Consciousness*, 6 (1): 49-53. DOI: 10.1142/S1793843014400083
- [29] Samsonovich, A. V. (2013). Editorial: Special volume on BICA 2013. *Biologically Inspired Cognitive Architectures* 6: 1-2. DOI: [10.1016/j.bica.2013.08.001](https://doi.org/10.1016/j.bica.2013.08.001)
- [30] Samsonovich, A. V. (2013). Editorial: Special volume on emotional artificial intelligence. *Biologically Inspired Cognitive Architectures* 4: 1-2.
- [31] Samsonovich, A. V. (2012). On a roadmap for the BICA Challenge. *Biologically Inspired Cognitive Architectures* 1: 100-107. DOI: [10.1016/j.bica.2012.05.002](https://doi.org/10.1016/j.bica.2012.05.002). Web of Science citation index: 20.
- [32] Adams, S., Arel, I., Bach, J., Coop, R., Furlan, R., Goertzel, B., Hall, J. S., Samsonovich, A., Scheutz, M., Schlesinger, M., Shapiro, S. C., and Sowa, J. (2012). Mapping the landscape of human-level artificial general intelligence. *AI Magazine*, 33 (1): 25-42. Web of Science citation index: 4.
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- [34] Stocco, A., Lebiere, C., and Samsonovich, A. V. (2010). The B-I-C-A of biologically inspired cognitive architectures. *International Journal of Machine Consciousness* 2 (2): 171-192. DOI: 10.1142/S1793843010000552.
- [35] Samsonovich, A. V., and Ascoli, G. A. (2010). Correction: principal semantic components of language and the measurement of meaning. *PLoS One* 01/2010: 5(7).
- [36] Samsonovich, A. V. (2010). Editorial. *International Journal of Machine Consciousness* 2 (2): iii-iv. DOI: 10.1142/S1793843010000564.
- [37] Azevedo, R., Bench-Capon, T., Biswas, G., Carmichael, T., Green, N., Hadzikadic, M., Koyejo, O., Kurup, U., Parsons, S., Pirrone, R., Prakken, H., Samsonovich, A., Scott, D., and Souvenir, R. (2010). Reports on the AAAI 2009 Fall Symposia. *AI Magazine* 31 (1): 88-94.
- [38] Samsonovich, A. V. (2010). Is it time for the new cognitive revolution? *International Journal of Machine Consciousness* 2 (1): 55-58 (commentary to A. Sloman: An alternative to working on machine consciousness, *ibid.*). DOI: 10.1142/S1793843010000308.

- [39] Samsonovich, A. V., Goldin, R. F., and Ascoli, G. A. (2010). Toward a semantic general theory of everything. *Complexity* 15 (4): 12-18. Web of Science citation index: 4.
- [40] Beal, J., Bello, P., Cassimatis, N., Coen, M., Cohen, P. R., Davis, A., Maybury, M., Samsonovich, A., Shilliday, A., Skubic, M., Taylor, J., Walter, S., Winston, P., and Woolf, B. P. (2009). AAAI Fall Symposia Reports. *AI Magazine* 30 (2): 106-111.
- [41] Ascoli, G. A., and Samsonovich, A. V. (2008). Science of the conscious mind. *The Biological Bulletin* 215 (3): 204-215. Web of Science citation index: 5.
- [42] Ascoli, G. A. and Samsonovich, A. V. (2007). For goal scoring, the right place and the right time are matters of context. *Journal of Neuroscience Online*, 8 February 2007 (electronic response to Hok, V. et al., *Journal of Neuroscience* 2007, 27: 472-482). Available at <http://www.jneurosci.org/letters?first-index=126&hits=25>
- [43] Samsonovich, A. V. (2005). Hallucinating objects versus hallucinating subjects. *Behavioral and Brain Sciences* 28 (6): 772–773 (commentary to Collerton et al.: A novel Perception and Attention Deficit model for recurrent complex visual hallucination, *ibid.*).
- [44] Zaitsev, S. I. and Samsonovich, A. V. (1990). Inverse problem in electron-beam diagnostics: Induced concentration methods. *Bulletin of the Academy of Sciences of the USSR, Physical Series* (New York: Allerton) 54 (2): 53-61. (a translation of [18])
- [45] Zaitsev, S. I. and Samsonovich, A. V. (1990). Contrast formation of volume inhomogeneities in recording back-scattered electrons in a scanning electron microscope. *Bulletin of the Academy of Sciences of the USSR, Physical Series* (New York: Allerton) 54 (2): 43-48, 1990. (a translation of [19])
- [46] Zaitsev, S. I. and Samsonovich, A. V. (1987). Interpretation of the EBIC-contrast on a dislocation. *Bulletin of the Academy of Sciences of the USSR, Physical Series* (New York: Allerton) 51 (9): 114-120. (a translation of [20])

B. Peer-refereed conference proceedings papers and book chapters

- **Original research papers**

- [47] Samsonovich, A. V. (2015). Believable character reasoning and a measure of self-confidence for autonomous team actors. In: Nisar, A., Cummings, M., Hutchins, A., Kuter, U., Miller, C., and Sweet, N. (Eds.). *Self-*

Confidence in Autonomous Systems: Papers from the AAI Fall Symposium. AAI Technical Report FS-15-05 (in press). Palo Alto, CA: AAI Press.

- [48] Samsonovich, A. V. (2015). Mind ID: A psychologically inspired approach to secure authentication based on memory for faces. In: Clark, M.H., Bringsjord, S., and Bello, P. (Eds.). *Deceptive and Counter-Deceptive Machines: Papers from the AAI Fall Symposium. AAI Technical Report FS-15-03 (in press). Palo Alto, CA: AAI Press.*
- [49] Samsonovich, A. V., Kitsantas, A., O'Brien, E., and De Jong, K. A. (2015). Human cognition in preparation for problem solving. *Procedia Computer Science* (forthcoming).
- [50] Samsonovich, A. V. and Aha, D. W. (2015). Character-oriented narrative goal reasoning in autonomous actors. In: Aha, D. W. (Ed.). *Goal Reasoning: Papers from the ACS Workshop. Technical Report GT-IRIM-CR-2015-001, pp. 166-181. Atlanta, GA: Georgia Institute of Technology, Institute for Robotics and Intelligent Machines.* <https://smartech.gatech.edu/bitstream/handle/1853/53646/Technical%20Report%20GT-IRIM-CR-2015-001.pdf#page=169>
- [51] Samsonovich, A. V. (2013). Modeling human emotional intelligence in virtual agents. In: Lebiere, C. & Rosenbloom, P. S. (Eds.). *Integrated Cognition: AAI Technical Report FS-13-03, pp. 71-78. Palo Alto, CA: AAI Press.*
- [52] Samsonovich, A. V. (2012). Modeling social emotions in intelligent agents based on the mental state formalism. In: Raskin, V., & Taylor, J.M. (Eds.). *Artificial Intelligence of Humor: Papers from the AAI Fall Symposium. AAI Technical Report FS-12-02, pp. 76-83. Palo Alto, CA: AAI Press.*
- [53] Samsonovich, A.V. (2012). An approach to building emotional intelligence in artifacts. In Burgard, W., Konolige, K., Pagnucco, M., and Vassos, S. (Eds.). *Cognitive Robotics: AAI Technical Report WS-12-06, pp. 109-116. Palo Alto, CA: AAI Press.*
- [54] Samsonovich, A. V. (2012). A Metric Scale for "Abstractness" of the Word Meaning. In Jannach, D., Anand, S.S., Mobasher, B., and Kobsa, A. (Eds.). *Intelligent Techniques for Web Personalization and Recommender Systems: AAI Technical Report WS-12-09, pp. 48-52. Menlo Park, CA: The AAI Press.*
- [55] Samsonovich, A. V., and Ascoli, G. A. (2011). NeuroNavigator: A hippocampus-inspired cognitive architecture for spiking network implementation. In Sariel-Talay, S., Smith, S. F., & Onder, N. (Eds.). *Automated Action Planning for Autonomous Mobile Robots: Papers from the 2011 AAI Workshop, AAI Technical Report WS-11-09, pp. 76-77. Menlo Park, CA: AAI Press.*
- [56] Samsonovich, A. V., De Jong, K. A., Kitsantas, A., and O'Brien, E. (2010). Assessment of the critical components of a transformative self-regulated learning assistant. In Pirrone, R., Azevedo, R., and Biswas, G. (Eds.).

Cognitive and Metacognitive Educational Systems: Papers from the AAAI Fall Symposium. AAAI Technical Report FS-10-01, pp. 87-92. Menlo Park, CA: AAAI Press. ISBN 978-1-57735-483-3.

- [57] Samsonovich, A. V., Kitsantas, A., and Dabbagh, N. (2010). New kind of a computer-based SRL assistant: Implications for instruction. In de la Fuente, J., & Eissa, M. A. (Eds.). *International Handbook on Applying Self Regulated Learning in Different Settings*, pp. 391-412. New York, NY: Peter Lang Publishing Group.
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- [61] Samsonovich, A. V. (2009). The Constructor metacognitive architecture. In Samsonovich, A. V. (Ed.). (2009). *Biologically Inspired Cognitive Architectures II: Papers from the AAAI Fall Symposium. AAAI Technical Report FS-09-01*, pp. 124-134. Menlo Park, CA: AAAI Press. ISBN 978-1-57735-435-2. Available at <http://aaai.org/ocs/index.php/FSS/FSS09/paper/viewFile/999/1316>.
- [62] Samsonovich, A. V., Kitsantas, A., and Dabbagh, N. (2008). Cognitive Constructor: A biologically-inspired self-regulated learning partner. In Samsonovich, A. V. (Ed.). *Biologically Inspired Cognitive Architectures. Papers from the AAAI Fall Symposium. AAAI Technical Report FS-08-04*, pp. 162-167. Menlo Park, CA: AAAI Press. ISBN 978-1-57735-396-6. <http://www.aaai.org/Papers/Symposia/Fall/2008/FS-08-04/FS08-04-040.pdf>
- [63] Samsonovich, A. V., and Ascoli, G. A. (2008). Computing semantics of preference with a semantic cognitive map of natural language: Application to mood sensing from text. In Chomicki, J., Conitzer, V., Junker, U., and Perny, P. (Eds.). *Multidisciplinary Workshop on Advances in Preference Handling, Papers from the 2008 AAAI Workshop, AAAI Technical Report WS-08-09*, pp.

- 91-96. Menlo Park, CA: AAI Press. Available at <http://binf.gmu.edu/~asamsono/papers/sams08d.pdf>
- [64] Samsonovich, A. V., Ascoli, G. A., Morowitz, H., and Kalbfleisch, M. L. (2008). A scientific perspective on the hard problem of consciousness. In Wang, P., Goertzel, B., and Franklin, S. (Eds.). *Artificial General Intelligence 2008: Proceedings of the First AGI Conference. Frontiers in Artificial Intelligence and Applications* vol. 171, pp. 493-505. IOS Press: Amsterdam, The Netherlands. ISBN 978-1-58603-833-5. Available at http://members.cox.net/alexei.v.samsonovich/samsonovich_workshop.pdf
- [65] Samsonovich, A. V., De Jong, K. A., Kitsantas, A., Peters, E. E., Dabbagh, N., and Kalbfleisch, M. L. (2008). Cognitive constructor: An intelligent tutoring system based on a biologically inspired cognitive architecture (BICA). In Wang, P., Goertzel, B., and Franklin, S. (Eds.). *Artificial General Intelligence 2008: Proceedings of the First AGI Conference. Frontiers in Artificial Intelligence and Applications* vol. 171, pp. 311-325. IOS Press: Amsterdam, The Netherlands. ISBN 978-1-58603-833-5. Available at http://members.cox.net/alexei.v.samsonovich/samsonovich_paper61.pdf.
Web of Science citation index: 2.
- [66] De Jong, K. A., Samsonovich, A. V., and Ascoli, G. A. (2008). An Integrated Self-Aware Cognitive Architecture: George Mason University, STINFO Copy. *Final Technical Report AFRL-RI-RS-TR-2008-60, March 2008*, 36p. New York: Air Force Research Laboratory.
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- [69] Samsonovich, A. V. and Ascoli, G. A. (2007). Computational models of dendritic morphology: From parsimonious description to biological insight. In: Laubichler, M. D., and Muller, G. B. (Eds.). *Modeling Biology: Structure, Behaviors, Evolution. The Vienna Series in Theoretical Biology*, pp. 91-113. Boston, MA: MIT Press. ISBN-13 978-0-262-12291-7.
- [70] Samsonovich, A. V. (2006). Biologically inspired cognitive architecture for socially competent agents. In M. A. Upal and R. Sun (Eds.). *Cognitive Modeling and Agent-Based Social Simulation: Papers from the AAI*

Workshop, AAAI Technical Report, volume WS-06-02, pp. 36–48. Menlo Park, CA: AAAI Press.

- [71] Samsonovich, A. V., Ascoli, G. A., De Jong, K. A., and Coletti, M. A. (2006). Integrated hybrid cognitive architecture for a virtual roboscout. In M. Beetz, K. Rajan, M. Thielscher, and R.B. Rusu (Eds.). *Cognitive Robotics: Papers from the AAAI Workshop, AAAI Technical Reports*, volume WS-06-03, pp. 129–134. Menlo Park, CA: AAAI Press.
- [72] Samsonovich, A. V., Ascoli, G. A., and De Jong, K. A. (2006). Human-level psychometrics for cognitive architectures. In L. Smith, O. Sporns, C. Yu, M. Gasser, C. Breazeal, G. Deak, and J. Weng (Eds.). *Fifth International Conference on Development and Learning ICDL 2006*. Bloomington, IN, 2006: Department of Psychological and Brain Sciences, Indiana University. CD-ROM, ISBN 0-9786456-0-X.
- [73] Samsonovich, A. V., Ascoli, G. A., and De Jong, K. A. (2006). Computational assessment of the ‘magic’ of human cognition. In *Proceedings of the 2006 International Joint Conference on Neural Networks*, pp. 1170–1177. Vancouver, BC: IEEE Press.
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- [75] Samsonovich, A. V. and De Jong, K. A. (2005). Pricing the ‘free lunch’ of meta-evolution. In: H.-G. Beyer, U.-M. O’Reilly, D.V. Arnold, W. Banzhaf, C. Blum, E.W. Bonabeau, E. Cantu Paz, D. Dasgupta, K. Deb, J. A. Foster, E. D. deJong, H. Lipson, X. Llorca, S. Mancoridis, M. Pelikan, G. R. Raidl, T. Soule, A. Tyrrell, J.-P. Watson, and E. Zitzler (Eds.). *Proceedings of the Genetic and Evolutionary Computation Conference: GECCO-2005*, volume 2, pp. 1355–1362. New York, NY: Association for Computing Machinery.
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