

Short Curriculum Vitae of Alexei V. Samsonovich

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Citizenship: United States of America
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Current position: Research Assistant Professor, Krasnow Institute for Advanced Study.
Current support: (1) IARPA KRNS via HRL; (2) OSD ASD R&E via NRL/Exelis contract.

Education

Years	Institution and location	Field of study	Degree
1991-1997	Program in Applied Mathematics at the Graduate College of the University of Arizona, Tucson, AZ 85721	Applied Mathematics	Ph.D. (1997) M.Sc. (1996)
1974-1980	Moscow Institute of Physics and Technology, Moscow Region, 141700, Russian Federation	Theoretical Physics	M.Sc. equivalent (1980)
1971-1974	Kiev Physical Mathematical School #145, Kiev, 01023, Ukraine	General	B.Sc. equivalent (1974)

Research experience, including positions held and research grant awards

2000 - present: Research Assistant Professor, Krasnow Institute for Advanced Study, George Mason University, Fairfax, VA 22030-4444. *Support:* HBP NIH R01 NS39600 grant from NINDS, NIMH and NSF (PI: G.A. Ascoli); DARPA IPTO BICA grant (PI: K.A. De Jong, co-PIs: **A.V. Samsonovich** and G.A. Ascoli); GMU CCT mini-grant (PI: K.A. De Jong, co-PIs: **A.V. Samsonovich** and A. Kitsantas); DARPA DSO SyNAPSE (PI: G. A. Ascoli, HRL subcontract); MURI grant (PI: G.A. Ascoli); IARPA KRNS (PI: G.A. Ascoli, HRL subcontract), OSD ASD R&E (PI: D. W. Aha, Naval Res. Lab., via Exelis contract).

1997 - 2000: Postdoctoral Research Associate, Arizona Research Laboratories, Division of Neural Systems Memory & Aging and Psychology Department, University of Arizona, Tucson, AZ 85721. *Support:* The University of Arizona Consciousness Studies Research Grant (L. Nadel and **A. V. Samsonovich**); McDonnell-Pew Cognitive Neuroscience Center Grant (PI: L. Nadel); Flinn Foundation Research Grant (PI: L. Nadel).

1991 - 1997: Graduate Research Assistant / Associate, Program in Applied Mathematics and Arizona Research Laboratories, Division of Neural Systems Memory & Aging, University of Arizona, Tucson, AZ 85721. *Support:* MH 46823-07, NS-20331, ONR-352590, DMS-8902579, DMS-9114503. **Ph.D. Dissertation:** A. Samsonovich, *Attractor-Map Theory of the Hippocampal Representation of Space*, 302 pages. The University of Arizona: Tucson, AZ. UMI Dissertation Services: A Bell & Howell Company, Ann Arbor, MI, 1997 (copy available at <http://mason.gmu.edu/~asamsono/disser.pdf>).

Prior to 1991: Junior Research Scientist, IMT HPM USSR Acad. Sci., Moscow Region.

Selected Synergistic Activities

- Since 2012: Founding Editor-in-Chief, *Biologically Inspired Cognitive Architectures* (<http://www.journals.elsevier.com/biologically-inspired-cognitive-architectures/>).
- Since 2010: Founding Chair and Co-Chair of the BICA annual conference.
- Organizer of AAAI Fall Symposia: Integrated Cognition (2013), BICA (2008-2009).
- Since 2010: Founding President of the BICA Society (<http://bicasociety.org>).
- 2010: Guest editor of the *International Journal of Machine Consciousness vol.2 no.2*.
- 2005-2006: Co-PI, DARPA BICA Grant with Drs. K.A. De Jong (PI) and G.A. Ascoli.
- Recent invited talks with full travel support by the inviting party include: BICA 2013, Kiev, Ukraine; “Biology – the Science of the XXI Century”, Puschino, RF, 2013; BICA-2012, Palermo, Italy, 2012; Elsevier Editor’s Conference, Boston, 2012; ICNC-2012, Rostov, RF, 2012; Neuroinformatics-2011, Moscow, 2011; Queens University, Kingston, Canada, 2007.

Teaching and leadership experience

Fall 2014, Spring 2013: GMU PSYC 317. Cognitive Psychology (3 credits).

2014: Supervisor of a Research Assistant supported by the IARPA KRNS grant

Spring 2007: GMU MATH 125. Discrete Mathematics (3 credits).

Spring 2007: GMU BIOL 580. Computer Applications for the Life Sciences (3 credits).

Fall 2006: GMU BINF 739. High-Performance Computing in Computational Biology(3cr).

2005-2006: Scientific leader of 3 graduate students within the DARPA IPTO BICA Grant.

2000-2002: GMU PSYC 372. “Physiological Psychology” (TA to Dr. G. A. Ascoli).

Representative publications (out of over 100 refereed papers and 2 patents)

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.

Samsonovich, A.V. (2013). Emotional biologically inspired cognitive architecture. *Biologically Inspired Cognitive Architectures*, 6: 109-125.

Samsonovich, A.V., and Ascoli, G.A. (2013). Augmenting weak semantic cognitive maps with an abstractness dimension. *Comp. Intelligence and Neuroscience*, doi:10.1155/2013/308176.

Ascoli, G. A. & Samsonovich, A. V. (2012). *Semantic Cognitive Map*. Patent US 8,190,422 B2.

Samsonovich, A. V. & Ascoli, G. A. (2010). Principal Semantic Components of Language and the Measurement of Meaning. *PLoS ONE* 5 (6): e10921.1-e10921.17.

Samsonovich, A. V. & 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.

Samsonovich, A. V. & Ascoli, G. A. (2006). Morphological homeostasis in cortical dendrites. *PNAS* 103 (5): 1569-1574.

Nadel, L., Samsonovich, A., Ryan, L., & Moscovitch, M. (2000). Multiple trace theory of human memory: Computational, neuroimaging, and neuropsychological results. *Hippocampus* 10 (4): 352–368.

Samsonovich, A. & 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 for this research paper alone is over 400).