

Ali A. Minai (INNS Member No. 365)

Professor

Department of Electrical & Computer Engineering

University of Cincinnati

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Appointments:

<input type="checkbox"/>	University of Cincinnati	Assistant/Associate/Full Professor	1993 – present
<input type="checkbox"/>	University of Cincinnati	Graduate Program in Neuroscience	2006 – present
<input type="checkbox"/>	University of Virginia	Research Associate, Neuroscience	1991 – 1993

Education:

<input type="checkbox"/>	University of Virginia	Electrical Engineering	Ph.D. 1991
<input type="checkbox"/>	University of Virginia	Electrical Engineering	M.S. 1987
<input type="checkbox"/>	University of Virginia	Computational Neuroscience	PostDoc 1991-93

Professional Activities (INNS-Related in Red)

<input type="checkbox"/>	President	International Neural Network Society	2015-2016
<input type="checkbox"/>	VP for Conferences	International Neural Network Society	2012-2014
<input type="checkbox"/>	Member - Board of Governors	International Neural Network Society	2010-2019, 2020 -
<input type="checkbox"/>	Secretary	International Neural Network Society	2006-2010
<input type="checkbox"/>	General Chair	IJCNN'2011, San Jose	2011
<input type="checkbox"/>	Workshops Chair	IJCNN'2020, Glasgow	2020
<input type="checkbox"/>	Tutorials Chair	IJCNN'2009, Atlanta	2009
<input type="checkbox"/>	Workshops Chair	IJCNN'2007, Orlando	2007
<input type="checkbox"/>	General Chair/Co-Chair	International Conf. on Complex Systems	2011, 2018, 2020
<input type="checkbox"/>	Neural Networks Tech Comm.	IEEE-Computational Intelligence Society	2004-2005, 2009-2018
<input type="checkbox"/>	Action Editor	Neural Networks	2009-present
<input type="checkbox"/>	Associate Editor	IEEE Trans. Neural Net & Learning Sys	2016-2020
<input type="checkbox"/>	Associate Editor	IEEE Trans. on Neural Networks	2001-2008
<input type="checkbox"/>	Action Editor	Cognitive Systems Research	2016-2019
<input type="checkbox"/>	Series Editor	Springer/NECSI Series on Complex Sys	2011-2020
<input type="checkbox"/>	Editor of 12 books on complex systems and cognitive models (11 published by Springer)		
<input type="checkbox"/>	Member of numerous international conference program committees.		

Research Interests and Experience:

Neural models of cognition, navigation, and motor control; Computational neuroscience; Natural language processing; Deep learning applications; Unsupervised and developmental learning; Complex systems and networks; Multi-agent systems; Social networks; Collective learning in social systems.

Selected Publications ([Google Scholar h-Index 30](#), 4,200+ Citations)

- ☐ Minai, A.A. (2023) Deep Intelligence: What AI Should Learn from Nature's Imagination, Cognitive Computing <https://doi.org/10.1007/s12559-023-10124-9>
- ☐ Alabi, A., Vanderelst, D. and Minai, A.A. (2023) Rapid Learning of Spatial Representations for Goal-Directed Navigation Based on a Novel Model of Hippocampal Place Fields, Neural Networks 161: 116-128. <https://doi.org/10.1016/j.neunet.2023.01.010>
- ☐ Deshpande, A.M., Hurd, E., Minai, A.A. and Kumar, M. (2023)

- DeepCPG Policies for Robot Locomotion, IEEE Transactions on Cognitive and Developmental Systems
<https://doi.org/10.1109/TCDS.2023.3250393>
- Kenworthy, J.B., Doboli, S., Alsayed, O., Choudhary, R., Jaed, A., Minai, A.A. and Paulus, P.B. (2022) Toward the Development of a Computer-Assisted, Real-Time Assessment of Ideational Dynamics in Collaborative Creative Groups, *Creativity Research Journal* <https://doi.org/10.1080/10400419.2022.2157589>
- DiCesare, C.A., Minai, A.A., Riley, M.A., Ford, K.R., Hewitt, T.E., Myer, G.D. (2020) Emergence of Distinct Coordination Strategies Associated with the Drop Vertical Jump, *Medicine and Science in Sports & Exercise* 52: 1088-1098. <https://doi.org/10.1249/MSS.0000000000002235>
- Lamb, M., Nalepka, P., Kallen, R., Lorenz, T., Harrison, S., Minai, A.A., and Richardson, M. (2019) A Hierarchical Behavioral Dynamic Approach for Naturally Adaptive Human-Agent Pick-and-Place Interactions, *Complexity*: Article ID 5964632, <https://doi.org/10.1155/2019/5964632>
- Guo, X., Dominick, K.C., Minai, A.A., Li, H., Erickson, C.A. and Lu, L.J. (2017) Diagnosing Autism Spectrum Disorder from Brain Resting-State Functional Connectivity Patterns Using a Deep Neural Network with a Novel Feature Selection Method. *Frontiers in Neuroscience* 11:460. doi: 10.3389/fnins.2017.00460
- Lamb, M., Kallen, R.W., Harrison, S.J., Di Bernardo, M., Minai, A. and Richardson, M.J. (2017) To Pass or Not to Pass: Modeling the Movement and Affordance Dynamics of a Pick and Place Task. *Frontiers in Psychology* 8:1061. doi: 10.3389/fpsyg.2017.01061
- Sarim, M., Kumar, M., Jha, R. and, Minai, A.A. (2017) Memristive Device Based Learning for Navigation in Robots, *Bioinspiration and Biomimetics* 12: 066011 <https://doi.org/10.1088/1748-3190/aa7eab>
- Ali A. Minai (2015) Computational Models of Cognitive and Motor Control. In **Springer Handbook of Computational Intelligence**, J. Kacprzyk and W. Pedrycz (Eds.), Springer.
- Marupaka, N., Iyer, L.R. and Minai, A.A. (2012) Connectivity and thought: The influence of semantic network structure in a neurodynamical model of thinking. *Neural Networks* **32**: 147-158.
- Byadarhaly, K.V., Perdoor, M.C. and Mina, A.A. (2012) A Modular Neural Model of Motor Synergies, *Neural Networks* 32: 96-108.
- Iyer, L.R., Doboli, S., Minai, A.A., Brown, V.R., Levine, D.S. and Paulus, P.B. (2009) Neural Dynamics of Idea Generation and the Effects of Priming, *Neural Networks*, **22**: 674-686.
- Jin, Y. Liao, Y., Minai, A.A. and Polycarpou, M.M. (2006) Balancing Search and Target Response in Cooperative Unmanned Aerial Vehicle (UAV) Teams, *IEEE Transactions on Systems, Man, and Cybernetics B* 36: 571-587.
- Zhang, X. and Minai, A.A. (2004) Temporally-Sequenced Intelligent Block-Matching and Motion-Segmentation using Locally Coupled Neural Networks, *IEEE Transactions on Neural Networks* 15: 1202-1214.
- Leung, H., Kothari, R. and Minai, A.A. (2003) Phase-Transition in a Swarm Algorithm for Self-Organized Construction, *Physical Review E* 68: 046111-9.
- Best, P.J., White, A.M. and Minai, A.A. (2001) Spatial Processing in the Brain: The Activity of Hippocampal Place Cells, *Annual Reviews of Neuroscience* 24: 459-486.
- Bohland J.W. and Minai, A.A. (2001) Efficient Associative Memory using Small-World Architecture, *Neurocomputing* 38-40: 489-496.
- Doboli, S., Minai, A.A. and Best, P.J. (2000) Latent Attractors: A Model for Context-Dependent Place Representations in the Hippocampus, *Neural Computation* 12: 1003-1037.
- Sundar S. and Minai, A.A. (2000) Synchronization of Randomly Multiplexed Chaotic Systems with Application to Communication, *Physical Review Letters*, 85: 5456-5459.
- Minai, A.A. (1999) Using Chaos to Produce Synchronized Stochastic Dynamics in Non-Homogeneous Map Arrays with a Random Scalar Coupling, *Physics Letters A* 251: 31-38.
- Minai, A.A. and Anand, T. (1999) Synchronization of Chaotic Maps through a Noisy Coupling Channel with Application to Digital Communication, *Physical Review E* 59: 312-320.

Professional Memberships:

INNS (Senior Member), IEEE (Senior Member), AAAS, Tau Beta Pi, Eta Kappa Nu