

Elio Tuci – List of Publications

PhD Thesis

- Tuci E. *An exploration on the evolution of learning behaviour using robot based models*. University of Sussex, Brighton (UK), 20-02-2004.

M.Phil Thesis

- Tuci E. *Funzioni di economia cognitiva e ordine seriale nell'esplorazione spaziale di differenti disposizioni di siti di cibo in un primate non umano (Cebus apella)*. University of Rome "Sapienza", Rome, Italy, 06-12-1996.

Edited books, journals

- Tuci E., Giagkos A., Hallam J., Wilson M., (Eds.) *From Animals to Animats: Proceedings of the 14th International Conference on the Simulation of Adaptive Behavior (SAB)*, LNAI 9825, Springer-Verlag, Berlin, 2016.
- Trianni V., Tuci E., Passino K. (Guests Eds). *Swarm Cognition*, Special issue of the Swarm Intelligence Journal, Dorigo M. (Ed), Vol. 5, Issue 1, 2011.
- Vogt P., Sugita Y., Tuci E., and Nehaniv C. (Eds.). *Symbol Grounding and Beyond*. Proc. of the 3rd International Symposium on the Emergence and Evolution of Linguistic Communication (EELC III), LNAI 4211, Springer-Verlag, Berlin, 2006.

Book chapter

- Morlino G., Trianni V., Tuci E., *Evolution of Collective Perception in a Group of Autonomous Robots*, Studies in Computational Intelligence, Computational Intelligence, Vol. 399, pp 67-80, 2012.
- Trianni V., Tuci E., Ampatzis C., Dorigo M., *Evolutionary Swarm Robotics: a Theoretical and Methodological Itinerary from Individual Neuro-Controllers to Collective Behaviour*, in *The Horizons of Evolutionary Robotics*, Vargas P. A., Di Paolo E., Harvey I., and Husbands P. (Eds), MIT Press, pp 153-178.
- Ampatzis C., Tuci E., Trianni V., Dorigo M., *Evolution of Signaling in a Multi-Robot System: Categorization and Communication*. In *Evolution of Communication and Language in Embodied Agents*, Nolfi S., and Mirolli M., (Eds). Springer Verlag, Berlin, Germany, pp 161-178, 2010.
- Dorigo M., Tuci E., Trianni V., Gross R., Nouyan S., Ampatzis C., Labella T. H., O'Grady R., Bonani M., Mondada F. *SWARM-BOT: Design and Implementation of Colonies of Self-assembling Robots*. Computational Intelligence: Principles and Practice, Gary Y. Yen and David B. Fogel (Eds.), IEEE Computational Intelligence Society, NY, pp 103-135, 2006.

Papers in International Journals

- Narayan A., Alkilabi M.H.M., Labrosse F., Tuci E., *A Dynamic Color Perception System for Autonomous Driving in Unmarked Roads*, IEEE Transactions on Robotics, Submitted, October 2016.
- Alkilabi M.H.M., Narayan A., Tuci E., *Cooperative Object Transport with a Swarm of E-puck Robots: Robustness and Scalability of Evolved Collective Strategies*, Swarm Intelligence Journal, Submitted, October 2016.
- Lyon C., Nehaniv C.L., Saunders J., Belpaeme T., Broz F., Fischer K., Förster F., Lehmann H., Metta G., Mohan V., Morse A., Nolfi S., Nori F., Rohlfing K., Sciutti A., Tani J., Tuci E., Wrede B., Zeschel A., Cangelosi A. *Embodied Language Learning and Cognitive Bootstrapping: Methods and Design Principles*, Journal of Advanced Robotic Systems (JARS), In Press.
- Tuci E., Rabérin A., *On the Design of Generalist Strategies for Swarms of Simulated Robots Engaged in Task-allocation Scenarios*, Swarm Intelligence Journal (Springer), Volume 9, Issue 4, pp. 267-290, 2015.

- Tuci E., Trianni V., *On the Evolution of Homogeneous Multi-Robot Teams: Clonal versus Aclonal Approaches*. Neural Computing & Applications Journal (Springer), Vol. 25, pp. 1063-1076, 2014.
- Mitavskiy B., Tuci E., Cannings C., Rowe J., He J. *Geiringer Theorems: From Population Genetics to Computational Intelligence, Memory Evolutionary Systems and Hebbian Learning*. Natural Computing Journal (Springer), Vol. 12, Issue 4, pp 473-484, 2013.
- Dorigo M., Floreano D., Gambardella L. M., Mondada F., Nolfi S., Baaboura T., Birattari M., Bonani M., Brambilla M., Brutschy A., Burnier D., Campo A., Christensen A. L., Decugnière A., Di Caro G., Ducatelle F., Ferrante F., Fröster A., Martinez Gonzales J., Guzzi J., Longchamp V., Magnenat S., Mathews N., Montes de Oca M. A., O'Grady R., Pinciroli C., Pini G., Rétornaz P., Roberts J., Sperati V., Stirling T., Stranieri A., Stützle T., Trianni V., Tuci E., Turgut A. E. and Vaussard F. *Swarmanoid: A novel concept for the study of heterogeneous robotic swarms*, IEEE Robotics and Automation Magazine. Vol. 20, No. 4, pp 60-71, 2013.
- Tuci E., Ferrauto T., Zeschel A., Massera G., Nolfi S., *An Experiment on the Evolution of Compositional Semantics and Behaviour Generalisation in Artificial Agents*. Special Issue on “Grounding Language in Action” of the IEEE Transactions on Autonomous Mental Development Journal (TAMD), Vol. 3, No. 2, pp 1-14, 2011.
- Trianni V., Tuci E., Passino K.M., *Special Issue on Swarm Cognition*. Special Issue Editorial, Swarm Intelligence Journal, Springer, Vol. 5, Issue 1, pp 1-2, 2011.
- Trianni V., Tuci E., Passino K.M., Marshall J.A.R., *Swarm Cognition: an Interdisciplinary Approach to the study of Self-organising Biological Collectives*. Special Issue on “Swarm Cognition”, Swarm Intelligence Journal, Springer, Vol. 5, Issue 1, pp 3-18, 2011.
- Cangelosi A., Metta G., Sagerer G., Nolfi S., Nehaniv C., Fischer K., Tani J., Sandini G., Fadiga L., Wrede B., Rohlfing K., Tuci E., Dautenhahn K., Saunders J., Zeschel A. *Integration of Action and Language Knowledge: A Roadmap for Developmental Robotics*. Transactions on Autonomous Mental Development (TAMD), Vol. 2, Issue 3, pp 167-195, 2010.
- Massera G., Tuci E., Ferrauto T., Nolfi S. *The Facilitatory Role of Linguistic Instructions on Developing Manipulation Skills*. IEEE Computational Intelligence Magazine, Vol. 5, Issue 3, pp 33-42, 2010.
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- Ampatzis C., Tuci E., Trianni V., Dorigo M. *Evolution of Signaling in a Multi-Robot System: Categorization and Communication*. Adaptive Behavior, Vol. 16, No 1, pp. 5-26, 2008.
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Papers in Peer-reviewed International Conferences and Workshops

- Narayan A., Alkilabi M.H.M., Labrosse F., Tuci E., *Road Detection using Convolutional Neural Networks*, IEEE Winter Conference on Applications of Computer Vision (WACV 2017), Submitted, October 2017.
- Alkilabi M.M.H., Narayan, A., Lu, C., Tuci, E., *Evolving group transport strategies for e-puck robots: moving objects towards a target area*, 13th International Symposium on Distributed Autonomous Robotic Systems (DARS 2016), London, UK, In Press.
- Alkilabi M.M.H., Narayan, A., Tuci, E., *Design and Analysis of Proximate Mechanisms for Cooperative Transport in Real Robots*, 10th International Conference on Swarm Intelligence, ANTS 2016, Eds M. Dorigo et al., LNCS 9882, pp 101-112, 2016.
- Charlesworth, P., Giagkos, A., Wilson, M., Tuci, E., *Comparing approaches for coordination of autonomous communications UAVs*, International Conference on Unmanned Aircraft Systems June 7-10, 2016, USA.
- Lanihun, O.A., Tiddeman, B., Tuci, E., Shaw, P., *Improving Active Vision System Categorization Capability through Histogram of Oriented Gradients*, Sixteenth International Conference Towards Autonomous Robotic Systems (TAROS), Eds C. Dixon, K. Tuyls, LNAI 9287, pp. 143-148, 2015.
- Giagkos A., Tuci E., Wilson M., *Advancing evolutionary coordination for fixed-wing communications UAVs* Sixteenth International Conference Towards Autonomous Robotic Systems (TAROS), Eds C. Dixon, K. Tuyls, LNAI 9287, pp. 124-135, 2015, (**Best Paper Award**).
- Narayan A., Labrosse F., Tuci E., *An Active Vision Approach to the Road Following Problem*, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Hamburg, Germany, October 2015.
- Alkilabi M.H.M., Chuan L., Tuci E., *Cooperative Object Transport Using Evolutionary Swarm Robotics Methods*, European Conference on Artificial Life (ECAL), Eds. Andrews P., Caves L., Doursat R., Hickinbotham S., Polack F., Stepney S., Taylor T., Timmis J., MIT Press, pp 464-471, 2015.
- Narayan, A. Labrosse, F., Tuci, E., *Simulated Road Following using Neuroevolution*, Artificial Life and Intelligent Agents Symposium First International Symposium, ALIA 2014, Eds C.J. Headleand, W.J. teahan, L.A. Cenydd, Bangor, UK, Springer, ISBN: 978-3-319-18083-0 (Print) 978-3-319-18084-7 (Online), pp. 17-30, November 5-6, 2014.
- Lanihun, O.A., Tiddeman, B., Tuci, E., Shaw, P., *Enhancing Active Vision System Categorization Capability through Uniform Local Binary Pattern*, Artificial Life and Intelligent Agents Symposium First International Symposium, ALIA 2014, Eds C.J. Headleand, W.J. teahan, L.A. Cenydd, Bangor, UK, Springer, ISBN: 978-3-319-18083-0 (Print) 978-3-319-18084-7 (Online), pp. 31-43, November 5-6, 2014.

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- Tuci E., *Evolutionary swarm robotics: genetic diversity, task-allocation and task-switching behavior*. Ninth International Conference on Swarm Intelligence (ANTS2014), Brussels, Belgium, LNCS, Vol. 8667, pp 98-109, 2014
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Papers in National Conferences/Workshops

- Rodrigues V. B, Tuci E., Bowen M.S, Holstein H., DeSouza O., *Soldiers, alates or both? Bang- bang strategy for allocation of resources in termites*. III Simpósio Brasileiro de Termotologia, João Pessoa, Paraíba, Brasil, October 2015.
- Giagkos A., Tuci E., Wilson M.S., Charlesworth P.B. *Autonomous coordinated flying for groups of communications UAVs*, Austrian Robotic Workshop, Klagenfurt, Austria, pp. 59-60, April 2015.
- Trianni, V., Tuci E., *Swarm Cognition: comportamenti collettivi, auto-organizzazione e processi cognitivi*. Sistemi Intelligenti, Anno XXIII, n. 2, Agosto 2011, pp. 329-336.
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Miscellaneous

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Journal Papers in preparation

- Giagkos A., Tuci E., Wilson M.S. *Effectiveness and performance validation of autonomous UAVs coordination system using a network simulator*, In preparation, to be submitted to Applied Soft Computing Journal.
- Giagkos A., Tuci E., Wilson M.S., Charlesworth P.B. *Evolutionary Algorithms and Game Theory for the Coordination of Autonomous UAVs: a Comparative Approach*, In preparation, to be submitted to Information Sciences Journal.