Auke Jan Ijspeert (December 2016)

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EDUCATION

Oct.1995 – Oct. 1998: **PhD in Artificial Intelligence**, University of Edinburgh, UK

Oct. 1990 - March 1995: **Diplôme d'Ingénieur Physicien** (equivalent to BSc, MSc in Physics), Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland.

PROFESSIONAL EXPERIENCE

April 2016 - now: **Full Professor**, School of Engineering, EPFL, Switzerland.

Oct. 2009 – March 2016: **Associate Professor**, School of Engineering, EPFL, Switzerland.

Nov. 2002 – Sept. 2009: **Swiss National Science Foundation Assistant Professor**, School of Computer and Communication Sciences, EPFL, Switzerland.

Nov. 2002 - now: **Adjunct faculty**, Department of Computer Science, University of Southern California, USA.

Jan. 2001 – Sept 2009: **External collaborator**, Department of Humanoid Robotics and Computational Neuroscience, ATR (Advanced Telecommunications Research institute), Kyoto, Japan.

Jan. 2001 – Oct. 2002: **Research Assistant Professor** Department of Computer Science, University of Southern California, USA.

June 1999 – Dec. 2000: **Postdoctoral researcher** with Prof. M.Arbib and Prof. S.Schaal. University of Southern California, USA.

Oct. 1998 - March 1999: **Postdoctoral researcher** with Prof. J.Nicoud and Dr. L.Gambardella. EPFL and IDSIA, Switzerland.

POSTDOC, PHD, AND MASTER STUDENT SUPERVISION

Supervisor of 22 postdocs and 23 PhD students (out of which 11 graduated). Several of these are now faculty members or group leaders (ETHZ, UC Louvain, MPI Tuebingen, Univ. of Teheran, University of Maastricht, and Ecole des Mines de Nantes). Supervisor of 73 MSc theses.

AWARDS

1. The *Industrial Robot* Highly Commended Award for a paper presented at the 18th International Conference on Climbing and Walking Robots (CLAWAR 2015), Hangzhou, September 2015.
2. Best paper award at IEEE RO-MAN 2014, the 23rd IEEE International Symposium on Robot and Human Interactive Communication, 25-29th August 2014 Edinburgh, Scotland, UK
3. Best paper award at the IEEE-RAS International conference on Humanoid Robots (Humanoids 2007), Pittsburgh, December 2007.
4. The *Industrial Robot* Highly Commended Award for a paper presented at the 8th International Conference on Climbing and Walking Robots (CLAWAR 2005), London, September 2005.

5. Overall Best Paper Award (out of 1,172 submitted, 689 accepted papers) at the IEEE International Conference on Robotics and Automation (ICRA 2002), Washington D.C., May 2002.
6. Young Professorship award from the Swiss National Science Foundation (2002-2006).
7. Young Researcher scholarship from the Swiss National Science Foundation (1999-2000).
8. Marie Curie Scholarship from the European Commission (1997-1998).
9. Young Researcher scholarship from the Swiss National Science Foundation (1995-1996).

INVITED KEYNOTE/PLENARY LECTURES

1. [forthcoming] International Symposium on Adaptive Motion of Animals and Machines, AMAM 2017. Sapporo, Japan. June 26 - 30, 2017.
2. 22nd International Workshop on Robotics in Alpe-Adria-Danube Region, RAAD2013, Portorož, Slovenia, Slovenia, October 26th - 28th, 2013
3. First Physics of biological and complex systems conference (PBCS 2013), Göttingen, Germany, October 19, 2013
4. Septième Conférence Internationale Francophone d'Automatique (CIFA 2012), Grenoble France, July 5, 2012
5. 11th IEEE-RAS International Conference on Humanoid Robots (Humanoids 2011), Bled, Slovenia, October 26th - 28th, 2011
6. EUSFLAT2011 7th conference of the European Society for Fuzzy Logic and Technology (EUSFLAT-2011), Aix Les Bains, July 20, 2011
7. 4th International Symposium on Aero-Aqua Bio-Mechanisms (ISABMEC2009), Shanghai, Aug29-Sept2 2009
8. Society for Experimental Biology's Meeting, session 'Integration of Active and Passive Control Mechanisms in Locomotion, Glasgow, UK June 28-July 1, 2009
9. RoboCup International Symposium 2009, TU Graz, Austria, June 30, 2009
10. Journées Nationales de la Recherche en Robotique 2007, Obernai, France, October 9-12, 2007
11. Twelfth Portuguese Conference on Artificial Intelligence, Covilha, Portugal, December 5-8 2005
12. The 3rd International Symposium on Adaptive Motion in Animals and Machines (AMAM2005), Technical University of Ilmenau, Germany, September 25-30 2005
13. *Evolutionary approaches to articulated robot locomotion using neural oscillators*, International Conference on Evolvable Systems (ICES2005), Barcelona, Spain, September 12 2005
14. 49th Internationales Wissenschaftliches Kolloquium (IWK49), Technical University of Ilmenau, Germany, 27 September 2004
15. Symposium on Evolvability & Interaction, Queen Mary University of London, UK, 8-10 October 2003
16. Human Centered Robotic Systems Symposium (HCRS 2002), Karlsruhe, Germany, Dec. 2002

CONFERENCE ORGANIZATION AND REVIEWING

Program Committee chairman (or main organizer) of 8 international conferences, Program Committee member of 55 international conferences, Editor or guest editor for 6 journals, Member of the Board of Reviewing Editors of Science, Reviewer for 24 journals, Member of the evaluation committees for 53 PhD theses.

PUBLICATIONS

72 journal articles, 4 edited books, 123 articles in international conferences (6 of which received distinctions). Publications in high-impact journals according to the ISI Journal Citation Report 2013: Science (twice) 31.5, Current Biology 9.9, Phil. Trans. of the Royal Society of London B 6.3, Brain Research Reviews 5.9, Proceedings of the IEEE 5.4, as well as robotics journals with the two highest impact factors (IEEE Transactions in Robotics 2.6, and Int. Journal of Robotics Research 2.5).

H-Index: 54, Total number of citations: 11983, Citations per year (2015): 1535 (Google Scholar, profile).

JOURNAL ARTICLES

1. Karakasiliotis, K., R. Thandiackal, K. Melo, T. Horvat, N. K. Mahabadi, S. Tsitkov, J. M. Cabelguen, and A. J. Ijspeert. "From cineradiography to biorobots: an approach for designing robots to emulate and study animal locomotion." ***Journal of The Royal Society Interface*** 13, no. 119 (2016).
2. S. Heim, M. Ajalloeian, P. Eckert, M. Vespignani and A. Ijspeert. On Designing an Active Tail for Legged Robots: Simplifying Control via Decoupling of Control Objectives, in Industrial Robot: An International Journal, vol. 43, num. 3, p. 338–346, 2016.
3. A. Gams, J. Van Den Kieboom, F. Dzeladini, A. Ude and A. J. Ijspeert. Real-time full body motion imitation on the COMAN humanoid robot, ***Robotica***, vol. 33, num. 5, p. 1049-1061, 2015.
4. L. Righetti, A. Nylen, K. Rosander and A. J. Ijspeert. Kinematic and gait similarities between crawling human infants and other quadruped mammals, ***Frontiers In Neurology***, vol. 6, p. UNSP 17, 2015.
5. D. Ryczko, J. Knüsel, A. Crespi, S. Lamarque, A. Mathou, A.J. Ijspeert, J.-M. Cabelguen. Flexibility of the axial central pattern generator network for locomotion in the salamander, ***Journal of Neurophysiology***, vol. 113, num. 6, p. 1921-1940, 2015.
6. M. Porez, F. Boyer and A. J. Ijspeert. Improved Lighthill fish swimming model for bio-inspired robots: Modeling, computational aspects and experimental comparisons, ***International Journal Of Robotics Research***, vol. 33, num. 10, p. 1322-1341, 2014
7. A. Ijspeert. Biorobotics: Using robots to emulate and investigate agile animal locomotion, ***Science***, vol. 346, num. 6206, p. 196-203, 2014.
8. D. Floreano, A. Ijspeert and S. Schaal. Robotics and Neuroscience, ***Current Biology***, vol. 24, p. R910-R920, 2014.
9. A. Spröwitz, R. Möckel, M. Vespignani, S. Bonardi and A. Ijspeert. Roombots: A Hardware Perspective on 3D Self-Reconfiguration and Locomotion with a Homogeneous Modular Robot, ***Robotics and Autonomous Systems***, Volume 62, Issue 7, Pages 1016–1033, 2014.
10. M. D. Mcdonnell, K. Boahen, A. Ijspeert and T. J. Sejnowski. Engineering Intelligent Electronic Systems Based on Computational Neuroscience, in ***Proceedings of the IEEE***, vol. 102, num. 5, p. 646-651, 2014.
11. F. Dzeladini, J. Van Den Kieboom and A. Ijspeert. The contribution of a central pattern generator in a reflex-based neuromuscular model, in ***Frontiers In Human Neuroscience***, vol. 8, 2014.
12. A. Gams, B. Nemec, A. J. Ijspeert and A. Ude. Coupling Movement Primitives: Interaction With the Environment and Bimanual Tasks, in ***IEEE Transactions on Robotics***, vol. 30, num. 4, p. 816-830, 2014.
13. A. Spröwitz, M. Ajallooeian, A. Tuleu and A. Ijspeert. Kinematic primitives for walking and trotting gaits of a quadruped robot with compliant legs, in ***Frontiers in Computational Neuroscience***, vol. 8, num. 27, p. 1-13, 2014.

14. M. Khoramshahi, H. J. Bidgoly, S. Shafiee, A. Asaei and A. J. Ijspeert et al. Piecewise linear spine for speed-energy efficiency trade-off in quadruped robots, in ***Robotics And Autonomous Systems***, vol. 61, num. 12, p. 1350-1359, 2013.
15. A. Bicanski, D. Ryczko, J.-M. Cabelguen and A. J. Ijspeert. From lamprey to salamander: an exploratory modeling study on the architecture of the spinal locomotor networks in the salamander, in ***Biological Cybernetics***, vol. 107, num. 5, p. 565-587, 2013.
16. A. Bicanski, D. Ryczko, J. Knuesel, N. Harischandra and V. Charrier et al. Decoding the mechanisms of gait generation in salamanders by combining neurobiology, modeling and robotics, in ***Biological Cybernetics***, vol. 107, num. 5, p. 545-564, 2013.
17. A. J. Ijspeert, S. Grillner and P. Dario. Foreword for the special issue on Lamprey and Salamander Robots and the Central Nervous System, in ***Biological Cybernetics***, vol. 107, num. 5, p. 495-496, 2013.
18. M. Sitti, A. Menciassi, A. J. Ijspeert, K. H. Low and S. Kim. Survey and Introduction to the Focused Section on Bio-Inspired Mechatronics, in ***IEEE-ASME Transactions On Mechatronics***, vol. 18, num. 2, p. 409-418, 2013.
19. M. Ajallooeian, J. van den Kieboom, A. Mukovskiy, M. Giese and A. Ijspeert. A General Family of Morphed Nonlinear Phase Oscillators with Arbitrary Limit Cycle Shape, ***Physica D: Nonlinear Phenomena***, Vol. 263, 15 November, p. 41–56, 2013.
20. J. Knüsel, A. Bicanski, D. Ryczko, J.-M. Cabelguen and A. Ijspeert. A Salamander's Flexible Spinal Network for Locomotion, Modeled at Two Levels of Abstraction, in ***Integrative and Comparative Biology***, 53(2):269-82, 2013.
21. R. Ronsse, D. Rossi, S. M. Maria, N. Vitiello and T. Lenzi et al. Real-Time Estimate of Velocity and Acceleration of Quasi-Periodic Signals Using Adaptive Oscillators, *in* ***IEEE Transactions on Robotics***, vol. 29, num. 3, p. 783-791, 2013.
22. A. Crespi, K. Karakasiliotis, A. Guignard and A. J. Ijspeert. Salamandra Robotica II: An Amphibious Robot to Study Salamander-Like Swimming and Walking Gaits, in ***IEEE Transactions on Robotics***, vol. 29, num. 2, p. 308-320, 2013.
23. F. L. Moro, A. Sprowitz, A. Tuleu, M. Vespignani and N. G. Tsagarakis et al. Horse-like walking, trotting, and galloping derived from kinematic Motion Primitives (kMPs) and their application to walk/trot transitions in a compliant quadruped robot, in ***Biological Cybernetics***, vol. 107, num. 3, p. 309--320, 2013.
24. A. J. Ijspeert, J. Nakanishi, H. Hoffmann, P. Pastor and S. Schaal. Dynamical Movement Primitives: Learning Attractor Models for Motor Behaviors, in ***Neural Computation***, vol. 25, num. 2, p. 328-373, 2013. **"Highly cited label" on Web of Science: "*As of May/June 2014, this highly cited paper received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year*".**
25. A. Sproewitz, A. Tuleu, M. Vespignani, M. Ajallooeian and E. Badri et al. Towards Dynamic Trot Gait Locomotion---Design, Control and Experiments with Cheetah-cub, a Compliant Quadruped Robot, in ***International Journal of Robotics Research***, vol. 32, num. 8, p. 932 - 950, 2013.
26. K. Karakasiliotis, N. Schilling, J.-M. Cabelguen and A. Ijspeert. Where are we in understanding salamander locomotion: biological and robotic perspectives on kinematics, in ***Biological Cybernetics***, 2012.
27. H. Hauser, A. J. Ijspeert, R. M. Fuechslin, R. Pfeifer and W. Maass. The role of feedback in morphological computation with compliant bodies, in ***Biological Cybernetics***, vol. 106, num. 10, p. 595-613, 2012.
28. T. Petric, A. Gams, A. J. Ijspeert and L. Zlajpah. On-line frequency adaptation and movement imitation for rhythmic robotic tasks, in ***International Journal Of Robotics Research***, vol. 30, p. 1775-1788, 2011.

29. H. Hauser, A. J. Ijspeert, R. M. Fuechslin, R. Pfeifer and W. Maass. Towards a theoretical foundation for morphological computation with compliant bodies, in ***Biological Cybernetics***, vol. 105, p. 355-370, 2011.

30. S. De Rossi, N. Vitiello, L. Tommaso, R. Ronsse, B. Koopman, A. Persichetti, F. Vecchi, A.J. Ijspeert, He. van der Kooij, M.C. Carrozza. Sensing pressure distribution on a lower-limb exoskeleton physical human-machine interface. ***Sensors***. 11(1), 207-227, 2011.

31. R. Ronsse, N. Vitiello, T. Lenzi, J. van den Kieboom, M. C. Carrozza, A. J. Ijspeert Human-robot synchrony: flexible assistance using adaptive oscillators. ***IEEE Transactions on Biomedical Engineering*** vol. 58, p. 1001-1012, 2011.

32. A. Akbarimajd, M. Mili, and A. J. Ijspeert. Analogy between Juggling and Hopping: Active object manipulation approach. ***Advanced Robotics***. vol. 25, p. 1793-1816, 2011.

33. Renaud Ronsse, Tommaso Lenzi, Nicola Vitiello, Bram Koopman, Edwin van Asseldonk, Stefano Marco Maria De Rossi, Jesse van den Kieboom, Herman van der Kooij, Maria Chiara Carrozza and Auke Jan Ijspeert, Oscillator-based assistance of cyclical movements: model-based and model-free approaches, ***Medical and Biological Engineering and Computing***, 2011, DOI: 10.1007/s11517-011-0816-1

34. N. Harischandra, J. Knüsel, A. Kozlov, A. Bicanski and J.-M. Cabelguen et al. Sensory feedback plays a significant role in generating walking gait and in gait transition in salamanders: a simulation study, in ***Frontiers in Neurorobotics***, vol. 5, num. 3, p. 1-13, 2011.

35. H. Hauser, G. Neumann, A. J. Ijspeert and W. Maass. Biologically inspired kinematic synergies enable linear balance control of a humanoid robot, in ***Biological Cybernetics***, 104:235-259, 2011.

36. Dégallier, L. Righetti, S. Gay and A. Ijspeert. Toward simple control for complex, autonomous robotic applications: Combining discrete and rhythmic motor primitives. ***Autonomous Robots***. 31:155–181, 2011.

37. A. J. Ijspeert, P. Dario and S. Grillner. Guest editorial: special issue on control of locomotion—from animals to robots, in ***Autonomous Robots***, vol. 28, num. 3, p. 245-246, 2010.

38. D. Ryczko, V. Charrier, A. Ijspeert, and J.-M. Cabelguen. Segmental oscillators in axial motor circuits of the salamander: distribution and bursting mechanisms. ***Journal of Neurophysiology***. 104:2677-2692, 2010.

39. S. Dégallier and A. Ijspeert. Modeling Discrete and Rhythmic Movements through Motor Primitives: A Review, ***Biological Cybernetics***, 103 (4), 319-338, 2010.

40. A. Spröwitz, S. Pouya, S. Bonardi, J. van den Kieboom, R. Möckel, A. Billard, P. Dillenbourg, A.J. Ijspeert. Roombots: Reconfigurable Robots for Adaptive Furniture, ***IEEE Computational Intelligence Magazine***, 5(3): 20-32, 2010.

41. L. Righetti, J. Buchli and A. J. Ijspeert. Adaptive Frequency Oscillators and Applications, ***The Open Cybernetics and Systemics Journal*****,** vol. 3, p. 64-69, 2009.

42. Andani. M.E., Bahrami F., Maralani P.J., and Ijspeert A.J,. MODEM: a multi-agent hierarchical structure to model the human motor control system. ***Biological Cybernetics***, 2009.

43. Gams A., Ijspeert A.J., Schaal S., and Lenarcic J.. On-line learning and modulation of periodic movements with nonlinear dynamical systems. ***Autonomous Robots***, 27(1):3-23, July 2009.

44. Nandi G.C., Ijspeert A.J., Chakraborty P., Nandi A., Development of Adaptive Modular Active Leg (AMAL) using bipedal robotics technology, ***Robotics and Autonomous Systems*** 57 (6-7), pp. 603-616, 2009.

45. J. P. Desai, A. Menciassi and A. Ijspeert. Guest Editorial to the Special Letters Issue on Biomedical Robotics and Biomechatronics-BioRob, in ***IEEE Transactions On Biomedical Engineering***, vol. 56, p. 2293-2294, 2009.

46. Ijspeert A.J., Central pattern generators for locomotion control in animals and robots: a review. ***Neural Networks***, 21(4):642-653, 2008. **Highest cited article in Neural Networks in the period 2006-2010.**

Also "Highly cited label" on Web of Science: "*As of May/June 2014, this highly cited paper received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year*".

47. Pretto I., Ruffieux S., Menon C., Ijspeert A.J., and Cocuzza, S.. A point-wise model of adhesion suitable for real-time applications of bio-inspired climbing robot. ***Journal of Bionic Engineering***, 5:98-105, 2008.
48. Buchli J. and Ijspeert A.J.. Self-organized adaptive legged locomotion in a compliant quadruped robot. ***Autonomous Robots***, 25(4):331-347, 2008.
49. Buchli J., Righetti L., and Ijspeert A.J.. Frequency Analysis with a Nonlinear Dynamical System, ***Physica D***, 237: 1705–1718, 2008.
50. Sproewitz A., Moeckel R., Maye J., Ijspeert A.J., Learning to move in modular robots using central pattern generators and online optimization. ***International Journal of Robotics Research***. 27(3-4):423-443, 2008
51. Crespi A., Lachat D., Pasquier A., Ijspeert A.J. Controlling swimming and crawling in a fish robot using a central pattern generator. ***Autonomous Robots***, 25(1-2), pp 3-13, 2008.
52. Crespi A. and Ijspeert A.J.. Online optimization of swimming and crawling in an amphibious snake robot. ***IEEE Transactions on Robotics***, 24(1), 2008 pp 75-87.
53. Chevallier S., Ijspeert A.J., Ryczko D., Nagy F. and Cabelguen J.-M., Organisation of the spinal central pattern generators for locomotion in the salamander: biology and modelling. ***Brain Research Reviews***. 57(1), 2008, pp 147-161.
54. Tsakarakis N.G., Metta G., Sandini G., Vernon D., Beira R., Becchi F., Righetti L., Santos-Victor J., Ijspeert A.J., Carrozza M.C., and Caldwell D.G.. iCub - The Design and Realization of an Open Humanoid Platform for Cognitive and Neuroscience Research. ***Journal of Advanced Robotics***, 21(10), 2007, pp 1151-1175.
55. Ijspeert A.J., Crespi A., Ryczko D., and Cabelguen J.M.. From swimming to walking with a salamander robot driven by a spinal cord model. ***Science***, 315(5817):1416-1420, 2007.
56. Sommacal L., Melchior P., Dossat A., Petit J., Cabelguen J.M., Oustaloup A. and Ijspeert A.J., Improvement of the Muscle Fractional Multimodel for Low Rate Stimulation**,** ***Biomedical Signal Processing & Control*****,** 2 (3), July 2007, pp 226-233.
57. Webb B., Wessnitzer J., Bush S., Schul J., Buchli J., and Ijspeert AJ. Resonant neurons and bushcricket behaviour. ***Journal of Comparative Physiology***, 193(2), 2007 pp 285-288.
58. Buchli J., Righetti L. , and Ijspeert A.J.. Engineering entrainment and adaptation in limit cycle systems - from biological inspiration to applications in robotics. ***Biological Cybernetics***, 95(6):645-664, 2006.
59. Hohl L., Tellez R., Michel O., and Ijspeert A.J.: Aibo and Webots: Simulation, Wireless Remote Control, and Controller Transfer, ***Robotics and Autonomous Systems***, 54(6), 2006, pp 472-485.
60. Righetti L., Buchli, J. and Ijspeert A.J.: Dynamic Hebbian learning in adaptive frequency oscillators, ***Physica D***, 216(2), 2006 pp 269-281.
61. Moeckel R., Jaquier C., Drapel K., Dittrich E., Upegui A., Ijspeert A.J.: Exploring adaptive locomotion with YaMoR, a novel autonomous modular robot with Bluetooth interface, ***Industrial Robot***, 33(4), 2006, pp 285-290.
62. Menzer F., Buchli J., Howard D.M, and Ijspeert A.J.: Nonlinear modelling of double and triple period pitch breaks in vocal fold vibration. ***Logopedics Phoniatrics Vocology***, 31, 2006, pp 36-42.
63. Ijspeert A.J., Crespi A. and Cabelguen, J.M.: Simulation and Robotics Studies of Salamander Locomotion: Applying Neurobiological Principles to the Control of Locomotion in Robots, ***Neuroinformatics***, 3(3), 2005, pp 171-195.

64. Crespi A., Badertscher A., Guignard A. and Ijspeert A.J.: AmphiBot I : an amphibious snake-like robot, ***Robotics and Autonomous Systems***, vol. 50, issue 4, 2005, pp 163-175.

65. Schaal S., Billard A. Ijspeert A.J.: Computational Approaches to Motor Learning by Imitation, ***Philosophical Transactions of the Royal Society of London series B***, Vol 358:1431, 2003, pp 537-547.

66. Ijspeert A.J.: A connectionist central pattern generator for the aquatic and terrestrial gaits of a simulated salamander. ***Biological Cybernetics***, Vol. 84:5, 2001, pp 331-348.

67. Ijspeert A.J., Martinoli A., Billard A., Gambardella, L.M.: Collaboration through the exploitation of local interactions in autonomous collective robotics: the stick pulling experiment. ***Autonomous Robots***, Vol. 11:2. 2001, pp 149-171.

68. Lerman K., Galstyan A., Martinoli A., Ijspeert A.J.: A macroscopic analytical model of collaboration in distributed robotic systems, ***Artificial Life*** 7:4, 2001, pp. 375-393.

69. Ijspeert A.J., Hallam J. and Willshaw D.: Evolving swimming controllers for a simulated lamprey with inspiration from neurobiology, ***Adaptive Behavior*** 7:2, 1999, pp 151-172.

70. Billard A., Ijspeert A.J., Martinoli A.: A multi-robot system for adaptive exploration of a fast changing environment: probabilistic modelling and experimental study, ***Connection Science***, Vol. 11, No. 3/4, 1999, pp.357-377.

71. Martinoli A., Ijspeert A.J., Mondada F.: Understanding collective aggregation mechanisms: from probabilistic modelling to experiments with real robots, ***Robotics and Autonomous Systems*** 29, 1999, pp 51-63.

72. Ijspeert A.J., Kodjabachian J.: Evolution and development of a central pattern generator for the swimming of the lamprey, ***Artificial Life*** 5:3, 1999, pp 247-269.

BOOKS

1. Dynamical principles for neuroscience and intelligent biomimetic devices. Proceedings of the EPFL-LATSIS 2006 conference. A.J. Ijspeert, J. Buchli, A. Selverston, M. Rabinovich, M. Hasler, W. Gerstner, A. Billard, H. Markram, and D. Floreano (Editors). EPFL, 2006. ISBN 978-2-8399-0134-5.
2. Biologically Inspired Approaches to Advanced Information Technology: Second International Workshop, BioADIT 2006, A.J. Ijspeert, T. Masuzawa and S. Kusumoto (Editors), Lecture Notes in Computer Science, volume 3853, Springer Verlag, Berlin, 2006, ISBN 3-540-31253-6.
3. Proceedings of the Eighth International Conference on the Simulation of Adaptive Behavior, From Animals to Animats 8 (SAB 2004), S. Schaal, A.J. Ijspeert, A. Billard, S. Vijayakumar, J. Hallam, and J.-A. Meyer (Editors), MIT Press, Cambridge, 2004, ISBN 0-262-69341-0.
4. Biologically Inspired Approaches to Advanced Information Technology: First International Workshop, BioADIT 2004, A.J. Ijspeert, M. Murata and N Wakamiya (Editors), Lecture Notes in Computer Science, volume 3141, Springer Verlag, Berlin, 2004, ISBN 3-540-23339-3.

BOOK CHAPTERS

1. A.J. Ijspeert, A. Bicanski, J. Knuesel, J.-M. Cabelguen, Motor Pattern Generation. In From Neuron to Cognition (M. Arbib Editor). MIT Press. In press.
2. F. Iida and A.J. Ijspeert, Biologically Inspired Robotics. Handbook of Robotics. Springer. In press.
3. A.J. Ijspeert and J.-M. Cabelguen. Control of Aquatic and Terrestrial Gaits in Salamander. Encyclopedia of Computational Neuroscience, Springer. 2014

4. J. Knuesel, J.-M. Cabelguen, and A.J. Ijspeert. Decoding the Mechanisms of Gait Generation and Gait Transition in the Salamander Using Robots and Mathematical Models. *Progress in Motor Control: Theories, Experiments, and Applications, p. 417-451, 2010.*
5. J.-M. Cabelguen, A.J. Ijspeert, S. Lamarque, and D. Ryczko. Axial dynamics during locomotion in vertebrates: lesson from the salamander, *Progress in Brain Research*, Vol. 187, p. 149-162, 2010.
6. Crespi A. and Ijspeert A.J., *Salamandra Robotica*: A Biologically Inspired Amphibious Robot that Swims and Walks, in *Artificial Life Models in Hardware*, pages 35-64. Springer, London, 2009.
7. Schaal S., Mohajerian P., and Ijspeert A.J.. Dynamics systems vs. optimal control a unifying view, *Progress in Brain Research* Volume 165, 2007, pp 425-445.
8. Hallam J., Ijspeert A.J.: Using Evolutionary Methods to Parameterize Neural Models: a Study of the Lamprey Central Pattern Generator, in Biologically inspired robot behavior engineering, R.J. Duro, J. Santos, M. Graa (Eds), Springer Verlag, 2003, pp 119-142.
9. Ijspeert A.J: Vertebrate Locomotion, in The Handbook of Brain Theory and Neural Networks (2nd edition), M.Arbib (Ed), Bradford Books/The MIT Press, Cambridge, 2002, pp 649-654.

ARTICLES IN REFEREED INTERNATIONAL CONFERENCE PROCEEDINGS

1. F. Dzeladini, A. Wu, D. Renjewski, A. Arami and E. Burdet et al. Effects of a neuromuscular controller on a powered ankle exoskeleton during human walking. IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob), Singapore, 2016.
2. B. Bayat, N. Crasta, H. Li and A. Ijspeert. Optimal Search Strategies for Pollutant Source Localization. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Daejeon, Korea, 2016.
3. B. Bayat, A. Crespi and A. Ijspeert. Envirobot: A Bio-Inspired Environmental Monitoring Platform. IEEE/OES Conference on Autonomous Underwater Vehicles (AUV), Tokyo, Japan, 2016.
4. M. Mutlu, S. Bonardi, M. Vespignani, S. L. Hauser and A. Bernardino et al. Natural user interface for lighting control: Case study on desktop lighting using modular robots. IEEE International Symposium on Robot and Human Interactive Communication, New York City, NY, USA, 2016.
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