

Publications

- [103] Fayeem Aziz, Stephan K. Chalup, and James Juniper. Big data in IoT systems. In J Y. Khan and M. R. Yuce, editors, *IoT Systems and Networks*. Pan Stanford Publisher, 2018. accepted.
- [102] Aaron S.W. Wong, Ryan Jeffery, Peter Turner, Scott Sleaf, and Stephan K. Chalup. Robocup junior in the hunter region: Driving the future of robotic stem education. In *RoboCup 2018: Robot World Cup XXII*, Lecture Notes in Artificial Intelligence (LNAI). Springer International Publishing, Cham, 2019. accepted.
- [101] Trent Houlston and Stephan K. Chalup. Visual mesh: Real-time object detection using constant sample density. In *RoboCup 2018: Robot World Cup XIX*, Lecture Notes in Artificial Intelligence (LNAI). Springer International Publishing, Cham, 2019. accepted.
- [100] Maryam Mahsal Khan, Alexandre Mendes, and Stephan K. Chalup. Evolutionary wavelet neural network ensembles for breast cancer and parkinson’s disease prediction. *PLoS ONE*, 13(2):1–15, February 2018.
- [99] Rahul Paul and Stephan K. Chalup. A study on validating non-linear dimensionality reduction using persistent homology. *Pattern Recognition Letters*, 100:160–166, 2017.
- [98] Ljiljana Brankovic, Stephan Chalup, and Mark Wallis. Teaching advanced computing technologies to managers, engineers and other professionals. In *28th Australasian Association for Engineering Education Annual Conference (AAEE2017), Manly, Sydney, Australia, 2017*, 2017.
- [97] Asad Abbas and Stephan K. Chalup. Group emotion recognition in the wild by combining deep neural networks for facial expression classification and scene-context analysis. In *Proceedings of the 19th ACM International Conference on Multimodal Interaction, ICMI 2017*, pages 561–568, New York, NY, USA, 2017. ACM.
- [96] Abdul Jabbar, Luke Farrarwell, Jake Fountain, and Stephan K. Chalup. Training deep neural networks for detecting drinking glasses using synthetic images. In Derong Liu, Shengli Xie, Yuanqing Li, Dongbin Zhao, and El-Sayed M. El-Alfy, editors, *Neural Information Processing: 24th International Conference, ICONIP 2017, Guangzhou, China, November 14-18, 2017, Proceedings, Part II*, pages 354–363, Cham, 2017. Springer International Publishing.
- [95] Rahul Paul, R. P. Jagadeesh Chandra Bose, Stephan K. Chalup, and Gurulingesh Rarav. Improving operational performance in service delivery organizations through a metaheuristic task allocation algorithm. In *BPM2017, 15th International Conference on Business Process Management*, 2017.
- [94] Maryam Mahsal Khan, Alexandre Mendes, Ping Zhang, and Stephan K. Chalup. Evolving multi-dimensional wavelet neural networks for classification using cartesian genetic programming. *Neurocomputing*, 247:39–58, 2017.
- [93] Fayeem Aziz, Aaron S.W. Wong, James Welsh, and Stephan K. Chalup. Performance comparison of manifold alignment methods applied to pendulum dynamics. In *Applied Informatics and Technology Innovation Conference (AITIC)*. Springer, 2016. accepted 1 September 2016.

- [92] Trent Houlston, Jake Fountain, Yuqing Lin, Alexandre Mendes, Mitchell Metcalfe, Josiah Walker, and Stephan K. Chalup. Nuclear: A loosely coupled software architecture for humanoid robot systems. *Frontiers in Robotics and AI*, 3(20), 2016.
- [91] Ross J. Bille, Yuqing Lin, and Stephan K. Chalup. RTCSS: A framework for developing real-time peer-to-peer web applications. In *Australasian Web Conference 2016, at the Australasian Computer Science Week (ACSW 2016), Canberra, Australia, 2-5 February, 2016*. ACM Digital Library, 2016.
- [90] Mitchell Metcalfe, Brendan Annable, Monica Olejniczak, and Stephan K. Chalup. A study on detecting three-dimensional balls using boosted classifiers. In *Interactive Entertainment 2016, at the Australasian Computer Science Week (ACSW 2016), Canberra, Australia, 2-5 February, 2016*. ACM Digital Library, 2016.
- [89] Bilal H. Abedalguni, David J. Paul, Stephan K. Chalup, and Frans A. Henskens. A comparison study of cooperative q-learning algorithms for independent learners. *International Journal of Artificial Intelligence (IJAI)*, 14(1), 2016.
- [88] Maryam Mahsal Khan, Stephan K. Chalup, and Alexandre Mendes. Parkinson’s disease data classification using evolvable wavelet neural networks. In Tapabrata Ray, Ruhul Sarker, and Xiaodong Li, editors, *Artificial Life and Computational Intelligence, Second Australasian Conference, ACALCI 2016, Canberra, ACT, Australia, February 2-5, 2016. Proceedings*, volume 9592 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 113–124. Springer International Publishing, 2016.
- [87] Trent Houlston, Mitchell Metcalfe, and Stephan K. Chalup. A fast method for adapting lookup tables applied to changes in lighting colour. In *RoboCup 2015: Robot World Cup XIX*, volume 9513 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 190–201. Springer, 2015.
- [86] Bilal H. Abedalguni, Stephan K. Chalup, Frans A. Henskens, and David J. Paul. A multi-agent cooperative reinforcement learning model using a hierarchy of consultants, tutors and workers. *Vietnam Journal of Computer Science*, 2(4):213–226, 2015.
- [85] Josiah Walker and Stephan K. Chalup. Learning nursery rhymes using adaptive parameter neurodynamic programming. In Stephan K. Chalup, Alan D. Blair, and Marcus Randall, editors, *Artificial Life and Computational Intelligence, First Australasian Conference, ACALCI 2015, Newcastle, NSW, Australia, February 5-7, 2015. Proceedings*, volume 8955 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 196–209. Springer International Publishing, 2015.
- [84] Jake Fountain and Stephan K. Chalup. Point of regard from eye velocity in stereoscopic virtual environments based on intersections of hypothesis surfaces. In Stephan K. Chalup, Alan D. Blair, and Marcus Randall, editors, *Artificial Life and Computational Intelligence, First Australasian Conference, ACALCI 2015, Newcastle, NSW, Australia, February 5-7, 2015. Proceedings*, volume 8955 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 125–141. Springer International Publishing, 2015.
- [83] Michael J. Ostwald, Kenny Hong, and Stephan Chalup. A computational analysis of pareidolia-derived emotional messages in architecture. In Aaron Kozbelt, editor, *Proceedings of the Twenty-third Biennial Congress of the International Association of Empirical Aesthetics*, pages 58–63. International Association of Empirical Aesthetics (IAEA) website, 2014.

- [82] Lei Tan, Ross Bille, Yuqing Lin, Stephan K. Chalup, and Chris Tucker. Software development in the city evolutions project. In Karen Blackmore, Keith Nesbitt, and Shamus P. Smith, editors, *Fun and Games, IE2014 Proceedings of the 2014 Conference on Interactive Entertainment*, ACM International Conference Proceedings Series, pages 1–7. ACM, 2014.
- [81] Maryam Mahsal Khan, Stephan K. Chalup, and Alexandre Mendes. Evolving wavelet neural networks for breast cancer classification. In *Twelfth Australasian Data Mining Conference (AusDM'2014)*, Queensland University of Technology, Gardens Point, Brisbane, 27-28 November 2014, Conferences in Research and Practice in Information Technology (CRPIT). Australian Computer Society Inc., 2014.
- [80] Kenny Hong, Stephan K. Chalup, and Robert A. R. King. Affective visual perception using machine pareidolia of facial expressions. *IEEE Transactions on Affective Computing*, 5(4):352–363, October–December 2014.
- [79] Benedikt Boecking, Stephan K. Chalup, Detlef Seese, and Aaron S. W. Wong. Support vector clustering of time series data with alignment kernels. *Pattern Recognition Letters*, 45(1):129–135, August 2014.
- [78] Jake Fountain, Josiah Walker, David Budden, Alexandre Mendes, and Stephan K. Chalup. Motivated reinforcement learning for improved head actuation of humanoid robots. In *RoboCup 2013: Robot World Cup XVII*, volume 8371 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 268–279. Springer, 2014.
- [77] Shashank Bhatia, Stephan K. Chalup, and Michael J. Ostwald. Wayfinding: A method for the empirical evaluation of structural saliency using 3d isovists. *Architectural Science Review*, 56(3):220–231, 2013.
- [76] Shashank Bhatia and Stephan K. Chalup. Segmenting salient objects in 3d point clouds of indoor scenes using geodesic distances. *Journal of Signal and Information Processing*, 4(3B):102–108, 2013.
- [75] Shashank Bhatia and Stephan K. Chalup. A model of heteroassociative memory: Deciphering surprising features and locations. In Mary L. Maher, Tony Veale, Rob Saunders, and Oliver Bown, editors, *Proceedings of the Fourth International Conference on Computational Creativity (ICCC 2013)*, pages 139–146, Sydney, Australia, June 2013.
- [74] Aaron S. W. Wong, Steven Nicklin, Kenny Hong, Stephan K. Chalup, and Peter Walla. Robot emotions generated and modulated by visual features of the environment. In *2013 IEEE Symposium on Computational Intelligence for Creativity and Affective Computing (CICAC)*, 2013 IEEE Symposium Series on Computational Intelligence (SSCI), pages 9–16. IEEE, 2013.
- [73] Kenny Hong, Stephan K. Chalup, and Robert A. R. King. A component based approach for classifying the seven universal facial expressions of emotion. In *2013 IEEE Symposium on Computational Intelligence for Creativity and Affective Computing (CICAC)*, 2013 IEEE Symposium Series on Computational Intelligence (SSCI), pages 1–8. IEEE, 2013.
- [72] Kenny Hong, Stephan K. Chalup, Robert A. R. King, and Michael J. Ostwald. Scene perception using pareidolia of faces and expressions of emotion. In *2013 IEEE Symposium on Computational Intelligence for Creativity and Affective Computing (CICAC)*, 2013 IEEE Symposium Series on Computational Intelligence (SSCI), pages 79–86. IEEE, 2013.

- [71] Arash Jalalian and Stephan K. Chalup. GDTW-P-SVMs: Variable-length time series analysis using support vector machines. *Neurocomputing*, 99(1):270–282, January 2013.
- [70] Shashank Bhatia, Stephan K. Chalup, and Michael J. Ostwald. Analyzing architectural space: Identifying salient regions by computing 3d isovists. In H. Skates, editor, *Building on Knowledge: Theory and Practice, 46th Annual Conference of the Australian and New Zealand Architectural Science Association*, Southport, Queensland: Griffiths University, 2012. Digital publication, (CDROM).
- [69] David Budden, Shannon Fenn, Alexandre Mendes, and Stephan Chalup. Evaluation of colour models for computer vision using cluster validation techniques. In Xiaoping Chen, Peter Stone, Luis Enrique Sucar, and Tijn Van der Zant, editors, *RoboCup-2012: Robot Soccer World Cup XVI*, volume 7500 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 261–272, Berlin, 2013. Springer Verlag.
- [68] Aaron S. W. Wong, Stephan K. Chalup, Shashank Bhatia, Arash Jalalian, Jason Kulk, Steven Nicklin, and Michael J. Ostwald. Visual gaze analysis of robotic pedestrians moving in urban space. *Architectural Science Review*, 55(3):213–223, 2012.
- [67] Arash Jalalian, Stephan K. Chalup, and Michael J. Ostwald. Analysis of pedestrian spatial behaviour using gdtw-p-svms. In *The 2012 International Joint Conference on Neural Networks (IJCNN)*, Curran Associates, Inc., 57 Morehouse Lane, Red Hook, NY 12571 USA, 2012. Institute of Electrical and Electronics Engineers (IEEE).
- [66] Kenny Hong, Stephan K. Chalup, and Robert A. R. King. An experimental evaluation of pairwise adaptive support vector machines. In *The 2012 International Joint Conference on Neural Networks (IJCNN)*, Curran Associates, Inc., 57 Morehouse Lane, Red Hook, NY 12571 USA, 2012. Institute of Electrical and Electronics Engineers (IEEE).
- [65] Caslav Bozic, Stephan K. Chalup, and Detlef Seese. Application of intelligent systems for news analytics. In Michael Doumpos, Constantin Zopounidis, and Panos M. Pardalos, editors, *Financial Decision Making Using Computational Intelligence*, volume 70 of *Springer Optimization and Its Applications*, pages 71–101. Springer, New York, 2012.
- [64] Aaron S. W. Wong, Stephan K. Chalup, Shashank Bhatia, Arash Jalalian, Jason Kulk, and Michael J. Ostwald. Humanoid robots for modelling and analysing visual gaze dynamics of pedestrians moving in urban space. In R. Hyde, S. Hayman, and D. Cabrera, editors, *From principles to practice in architectural science. 45th Annual Conference of the Australian and New Zealand Architectural Science Association (Anzasca 2011)*. (CD-ROM). Faculty of Architecture, Design and Planning: Sydney, 2011. (received paper award).
- [63] Michael J. Ostwald, Josephine Vaughan, and Stephan K. Chalup. Data flow and processing in the computational fractal analysis method. In *CAADRIA 2011. Circuit Bending, Breaking and Mending. The 16th International Conference of the Association for Computer-Aided Architectural Design Research in Asia*, 2011.
- [62] Arash Jalalian, Stephan K. Chalup, and Michael J. Ostwald. Agent-agent interaction as a component of agent-environment interaction in the modelling and analysis of pedestrian visual behaviour. In *CAADRIA 2011. Circuit Bending, Breaking and Mending. The 16th International Conference of the Association for Computer-Aided Architectural Design Research in Asia*, 2011.

- [61] Arash Jalalian, Stephan K. Chalup, and Michael J. Ostwald. Architectural evaluation of simulated pedestrian spatial behaviour. *Architectural Science Review*, 54(2):132–140, 2011.
- [60] Arash Jalalian, Stephan K. Chalup, and Michael J. Ostwald. Simulating pedestrian flow dynamics for evaluating the design of urban and architectural space. In Chris Murphy, Susan J. Wake, David Turner, Graeme McConchie, and David Rhodes, editors, *44th Annual Conference of the Australian and New Zealand Architecture Science Association, Unitec, Auckland, New Zealand. 24th–26th November 2010*, 2010.
- [59] Arash Jalalian, Stephan K. Chalup, and Michael J. Ostwald. Intelligent evaluation of urban streetscape designs by analysing pedestrian body dynamics. In *Third International Workshop on Advanced Computational Intelligence (IWACI2010)*, pages 442–447. IEEE, 2010.
- [58] Kenny Hong, Stephan Chalup, and Robert King. A component based approach improves classification of discrete facial expressions over a holistic approach. In *2010 International Joint Conference on Neural Networks (IJCNN 2010) (part of IEEE WCCI)*, pages 90–97. IEEE, 2010.
- [57] Stephan K. Chalup and Michael J. Ostwald. Anthropocentric biocybernetic approaches to architectural analysis: New methods for investigating the built environment. In Paul S. Geller, editor, *Built Environment: Design Management and Applications*, chapter 5, pages 121–145. Nova Scientific, 2010.
- [56] Michael J. Ostwald, Christopher C. Tucker, and Stephan K. Chalup. Line segmentation: A computational technique for architectural image analysis. In *ACADIA 09: reForm (): Building a Better Tomorrow: Proceedings of the 29th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)*, Chicago, IL, 2009.
- [55] Stephan K. Chalup, Kenny Hong, and Michael J. Ostwald. Simulating pareidolia of faces for architectural image analysis. *International Journal of Computer Information Systems and Industrial Management Applications (IJCISIM)*, 2:262–278, 2010.
- [54] Michael J. Ostwald, Josephine Vaughan, and Stephan K. Chalup. Datacluster analysis of correlations between facade complexity and orientation in modernist domestic architecture. In *ANZAScA 2009: Proceedings of the 43rd Annual Conference of the Australian and New Zealand Architectural Science Association*, 2009.
- [53] Lukasz Wiklendt and Stephan Chalup. Balance control of a simulated inverted pendulum on a circular base. In Steve Scheduling, editor, *Proceedings of the 2009 Australasian Conference on Robotics & Automation, December 2 - 4, 2009 Sydney, Australia*. ARAA (on-line), 2009.
- [52] Stephan K. Chalup and Michael J. Ostwald. Anthropocentric biocybernetic computing for analysing the architectural design of house facades and cityscapes. *Design Principles and Practices: An International Journal*, 3(5):65–80, 2009.
- [51] L. Wiklendt, S. K. Chalup, and M. M. Seron. Simulated 3d biped walking with an evolution-strategy tuned spiking neural network. *Neural Network World*, 19:235–246, 2009.
- [50] Stephan K. Chalup, Naomi Henderson, Michael J. Ostwald, and Lukasz Wiklendt. A computational approach to fractal analysis of a cityscape's skyline. *Architectural Science Review*, 52(2):126–134, 2009.

- [49] Michael J. Ostwald, Josephine Vaughan, and Stephan K. Chalup. A computational investigation into the fractal dimensions of the architecture of kazuyo seijima. *Design Principles and Practices: An International Journal*, 3(1):231–244, 2009.
- [48] Suhuai Luo, Jesse S. Jin, Stephan K. Chalup, and Guoyu Qian. A liver segmentation algorithm based on wavelets and machine learning. In *International Conference on Computational Intelligence and Natural Computing*, volume 2, pages 122–125, Los Alamitos, CA, USA, 2009. IEEE Computer Society.
- [47] Aaron S.W. Wong and Stephan K. Chalup. Sound-scapes for robot localisation through dimensionality reduction. In Jonghyuk Kim and Robert Mahony, editors, *Proceedings of the 2008 Australasian Conference on Robotics and Automation (ACRA 2008)*. ARAA (on-line), 2008.
- [46] Naomi Henderson, Robert King, and Stephan Chalup. An automated colour calibration system using multivariate gaussian mixtures to segment hsi colour space. In Jonghyuk Kim and Robert Mahony, editors, *Proceedings of the 2008 Australasian Conference on Robotics and Automation (ACRA 2008)*. ARAA (on-line), 2008.
- [45] Stephan K. Chalup, Kenny Hong, and Michael J. Ostwald. A face-house paradigm for architectural scene analysis. In Richard Chbeir, Youakim Badr, Ajith Abraham, Dominique Laurent, and Fernando Ferri, editors, *CSTST 2008: Proceedings of The Fifth International Conference on Soft Computing as Transdisciplinary Science and Technology*, pages 397–403. ACM, 2008.
- [44] Stephan K. Chalup, Naomi Henderson, Michael J. Ostwald, and Lukasz Wiklendt. A method for cityscape analysis by determining the fractal dimension of its skyline. In N. Gu, L. F. Gul, M. Ostwald, and A. P. Williams, editors, *ANZAScA 2008: Innovation Inspiration and Instruction: New Knowledge in the Architectural Sciences. Proceedings of the 42nd Annual Conference of the Australian and New Zealand Architectural Science Association, November 2008*, pages 337–344, Newcastle, NSW, Australia, 2008.
- [43] Michael J. Ostwald, Josephine Vaughan, and Stephan Chalup. A computational analysis of fractal dimensions in the architecture of eileen gray. In Andrew Kudless, Neri Oxman, and Marc Swackhamer, editors, *ACADIA 2008: Silicon + Skin: Biological Processes and Computation. Proceedings of the 28th Annual Conference of the Association for Computer Aided Design in Architecture*, pages 256–263, 2008.
- [42] Lukasz Wiklendt, Stephan K. Chalup, and Maria Seron. Quadratic leaky integrate-and-fire neural network tuned with an evolution strategy for a simulated 3d biped walking controller. In *8th International Conference on Hybrid Intelligent Systems (HIS 2008)*, pages 144–149. IEEE Computer Society Press, 2008.
- [41] Lukasz Wiklendt, Stephan Chalup, and Rick Middleton. A small spiking neural network with lqr control applied to the acrobot. *Neural Computing and Applications*, 18(4):369–375, 2009.
- [40] Aaron S. W. Wong and Stephan K. Chalup. Towards visualisation of sound-scapes through dimensionality reduction. In *2008 International Joint Conference on Neural Networks (IJCNN 2008)*, pages 2833–2840. IEEE, 2008.

- [39] Chris Tucker, Michael Ostwald, Josh Marshall, and Stephan K. Chalup. The visual qualities of liveable streets. In *Architectural Science Association 41st Annual Conference ANZAScA 2007*, 2007.
- [38] Stephan K. Chalup, Riley Clement, Chris Tucker, and Michael J. Ostwald. Modelling architectural visual experience using non-linear dimensionality reduction. In M. Randall, H. Abbass, and J. Wiles, editors, *Australian Conference on Artificial Life (ACAL 2007)*, volume 4828 of *Lecture Notes in Computer Science*, pages 84–95. Springer, 2007.
- [37] Chris Lawrence, Michael R. Dickinson, and Stephan Chalup. Designing charm: Harnessing the affective power of form in robotic development. In *ConnectED 2007 International Conference on Design Education, Sydney*, 2007.
- [36] Stephan K. Chalup and Lukasz Wiklendt. Variations of the two-spiral task. *Connection Science*, 19(2):183–199, June 2007.
- [35] Stephan K. Chalup and Andreas Mitschele. Kernel methods in finance. In Detlef Seese, Christof Weinhardt, and Frank Schlottmann, editors, *Handbook on Information Technology in Finance*, International Handbooks Information System, chapter 27, pages 655–687. Springer Berlin Heidelberg, 2008.
- [34] Benjamin Goldsmith, Stephan K. Chalup, and Michael J. Quinlan. Regime type and international conflict: Towards a general model. *Journal of Peace Research*, 45(6):743–763, 2008.
- [33] Stephan K. Chalup, Craig L. Murch, and Michael J. Quinlan. Machine learning with aibo robots in the four legged league of robocup. *IEEE Transactions on Systems, Man, and Cybernetics—Part C*, 37(3):297–310, May 2007.
- [32] Christian Ullrich, Detlef Seese, and Stephan Chalup. Foreign exchange trading with support vector machines. In Reinhold Decker and Hans-J. Lenz, editors, *Studies in Classification, Data Analysis, and Knowledge Organization. Advances in Data Analysis, Proceedings of the 30th Annual Conference of the Gesellschaft für Klassifikation e.V., Freie Universität Berlin, March 8-10, 2006*, pages 539–546. Springer, Berlin Heidelberg, 2007.
- [31] Stephan K. Chalup, Riley Clement, Joshua Marshall, Chris Tucker, and Michael J. Ostwald. Representations of streetscape perceptions through manifold learning in the space of Hough arrays. In *Proceedings of the 2007 IEEE Symposium on Artificial Life (CI-ALife 2007), April 1-5, 2007*, pages 362–369. IEEE, 2007.
- [30] Michael J. Quinlan, Oliver Obst, and Stephan K. Chalup. Towards autonomous strategy decisions in the robocup four-legged league. In A. Karol, P. Peppas, and M. A. Williams, editors, *Proceedings Seventh IJCAI International Workshop on Nonmonotonic Reasoning, Action and Change, Hyderabad, India, 2007*.
- [29] S. K. Chalup, M. Dickinson, R. Fisher, R. H. Middleton, M. J. Quinlan, and P. Turner. Proposal of a kit-style robot as the new standard platform for the four-legged league. In *Australasian Conference for Robotics and Automation ACRA 2006*. ARAA (on-line), 2006.
- [28] Michael J. Quinlan and Stephan K. Chalup. Impact of tactical variations in the robocup four-legged league. In Wei Liu, Xiaoping Chen, and Mary-Anne Williams, editors, *Proceedings of International Symposium on Practical Cognitive Agents and Robots (PCAR 2006)*, pages 27–38, Perth, WA, 2006. University of Western Australia Press.

- [27] Chris Tucker, Michael J. Ostwald, Stephan K. Chalup, and Josh Marshall. Sustaining residential social space: A visual and spatial analysis of the nearly urban. In *ANZAScA 40th Annual Conference of the Architectural Science Association, "Challenges for architectural science in changing climates", 22-25 November 2006*. The University of Adelaide Adelaide, South Australia, 2006.
- [26] Tobias Dietrich, Detlef Seese, and Stephan K. Chalup. Classification of e-bay bidding characteristics. *IADIS International Journal on WWW/Internet*, 4(1):111–125, 2006.
- [25] Christian Ullrich, Detlef Seese, and Stephan Chalup. Predicting foreign exchange rate return directions with support vector machines. In Simeon J. Simoff, Graham J. Williams, John Galloway, and Inna Kolyshkina, editors, *Proceedings of the 4th Australasian Data Mining Conference (AusDM05)*, pages 221–240, 2005.
- [24] Chris Tucker, Michael J. Ostwald, Stephan K. Chalup, and Josh Marshall. A method for visual analysis of the streetscape. In Akkelines van Nes, editor, *5th International Space Syntax Symposium Delft, 13-17 June 2005*, volume 2, pages 519–529, Delft, The Netherlands, 2005.
- [23] Tobias Dietrich, Detlef Seese, and Stephan Chalup. Differences in bidding characteristics on ebay.de. In Nitya Karmakar and Pedro Isaias, editors, *Proceedings of the IADIS International Conference e-Commerce 2005 Porto, Portugal December 15-17, 2005*, pages 3–10. IADIS Press, 2005. (received paper award).
- [22] Stephan K. Chalup, Drew Mellor, and Frances Rosamond. The machine intelligence hex project. *Computer Science Education*, 15(4):245–273, December 2005.
- [21] Stephen R. Young and Stephan K. Chalup. Towards robot soccer team behaviours through approximate simulation. In *The 4th IEEE International Conference on Development and Learning (ICDL-05)*, page 162, 2005.
- [20] Michael J. Quinlan, Craig L. Murch, Richard H. Middleton, and Stephan K. Chalup. Traction monitoring for collision detection with legged robots. In Daniel Polani, Brett Browning, Andrea Bonarini, and Kazuo Yoshida, editors, *RoboCup 2003: Robot Soccer World Cup VII*, volume 3020 of *LNAI*, pages 374–384. Springer Berlin Heidelberg, 2004. (received paper award).
- [19] Chris Tucker, Michael J. Ostwald, and Stephan K. Chalup. A method for the visual analysis of streetscape character using digital image processing. In Zbigniew Bromberek, editor, *Contexts of Architecture: Proceedings of the 38th Annual Conference of the Architectural Science Association ANZAScA and the International Building Performance Simulation Association*, pages 134–140. Launceston, Tasmania: Australia and New Zealand Architectural Science Association, 2004.
- [18] Stephan K. Chalup and Craig L. Murch. Machine learning in the four-legged league. In *3rd IFAC Symposium on Mechatronic Systems, September 6-8, 2004*, pages 781–786, 2004.
- [17] Craig L. Murch and Stephan K. Chalup. Combining edge detection and colour segmentation in the four-legged league. In *Proceedings of the 2004 Australasian Conference on Robotics & Automation (ACRA'2004)*. ARAA (on-line), 2004.

- [16] Michael J. Quinlan, Stephan K. Chalup, and Richard H. Middleton. Application of SVMs for colour classification and collision detection with AIBO robots. In S. Thrun, L.K. Saul, and B. Schölkopf, editors, *Advances of Neural Information Processing Systems (NIPS'2003)*, volume 16, pages 635–642, Cambridge, MA, 2004. The MIT Press.
- [15] M. J. Quinlan, S. K. Chalup, and R. H. Middleton. Techniques for improving vision and locomotion on the aibo robot. In *Australian Conference on Robotics and Automation (ACRA'2003)*. ARAA (on-line), 2003.
- [14] O. J. Coleman and S. K. Chalup. Towards matching perception in simulated and real world robot navigation. In *Australian Conference on Artificial Life (ACAL'2003)*, 2003.
- [13] E. Chang, J. Davis, and S. K. Chalup. A new look at the enterprise information system life cycle - introducing the concept of generational change. In *5th International Conference On Enterprise Information Systems (ICEIS'2003)*, pages 40–50, 2003.
- [12] S. K. Chalup. Towards staged evolution of an artificial player for hex by enlarging the boardsize during training. In *The 2003 Congress on Evolutionary Computation (CEC 2003)*, 8 - 12 December 2003, Canberra, Australia, volume 3, pages 2210–2216. IEEE-Press, 2003.
- [11] S. K. Chalup and A. D. Blair. Incremental training of first order recurrent neural networks to predict a context-sensitive language. *Neural Networks*, 16(7):955–972, 2003.
- [10] Jianhua Yang, Vladimir Estivill-Castro, and Stephan Chalup. Support vector clustering through proximity graph modelling. In Lipo Wang, Jagath C. Rajapakse, Kunihiko Fukushima, Soo-Young Lee, and Xin Yao, editors, *Proceedings of the 9th International Conference on Neural Information Processing (ICONIP02)*, *Computational Intelligence for the E-Age, Volume 2*, pages 898–903. IEEE, 2002.
- [9] S. K. Chalup and D. Mellor. The machine intelligence hex project - an overview. *Australian Journal of Intelligent Information Processing Systems*, 8(1):6–23, November 2002.
- [8] S. K. Chalup and A. D. Blair. Software for analysing recurrent neural nets that learn to predict non-regular languages. In *International Colloquium on Grammatical Inference (ICGI'2002)*, volume 2484 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 296–298. Springer-Verlag, 2002.
- [7] Stephan K. Chalup. Incremental learning in biological and machine learning systems. *International Journal of Neural Systems*, 12(6):447–465, 2002.
- [6] S. K. Chalup. Issues of neurodevelopment in biological and artificial neural networks. In *Proceedings of the Fifth Biannual Conference on Artificial Neural Networks and Expert Systems (ANNES'2001)*, pages 40–45, 2001.
- [5] S. Chalup and A. D. Blair. Hill climbing in recurrent neural networks for learning the $a^n b^n c^n$ language. In T. Gedeon, P. Wong, S. Halgamuge, N. Kasabov, D. Nauck, and K. Fukushima, editors, *Proceedings, 6th International Conference on Neural Information Processing (ICONIP'99), ANZIS'99 & ANNES'99 & ACNN'99, Perth, Western Australia, 16-20 November 1999*, volume 2, pages 508–513, 1999.

- [4] S. Chalup and F. Maire. Design issues in hill climbing for neural network training. In *Proceedings, Australian Conference on Robotics and Automation 1999 (ACRA'99)*, pages 68–73. Queensland Centre for Advanced Technologies Brisbane, Australia, 1999.
- [3] S. Chalup and F. Maire. A study on hill climbing for neural network training. In *Proceedings of the 1999 Congress on Evolutionary Computation (CEC99), July 6-9, 1999, Mayflower Hotel, Washington D.C., USA*, volume 3, pages 2014–2021, 1999.
- [2] Michael Towsey, Joachim Diederich, Ingo Schellhammer, Stephan Chalup, and Claudia Brugman. Natural language learning by recurrent neural networks: A comparison with probabilistic approaches. In D. M. W. Powers, editor, *Proceedings of Joint Conference on New Methods in Language Processing and Computational Natural Language Learning NeMLaP3/CoNLL98: New Methods in Language Processing and Computational Natural Language Learning, ACL*, pages 3–10, 1998.
- [1] S. Chalup, R. Hayward, and J. Diederich. Rule extraction from artificial neural networks trained on elementary number classification tasks. In *Australian Neural Network Conference (ACNN'98), The University of Queensland, Brisbane 1998*, pages 265–270, 1998.