

Susanne Still

Information and Computer Sciences
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Professional Experience

- 1/05 – present **Assistant Professor** University of Hawai'i, Mānoa, Department of Information and Computer Sciences (ICS).
- 8/03–12/04: **Research Staff**, Princeton University, Department of Physics and Lewis Sigler Institute for Integrative Genomics: Theoretical Biophysics Group, Prof. W. Bialek.
- 7/02–8/03: **Visiting Research Fellow**, Princeton University, Department of Physics. Supported in part by a Research Fellowship granted by the German Research Association.
- 10/01–7/02: **Research Staff**, Princeton University, Department of Physics.
- 10/00–10/01: **Post-Doctoral Researcher**, NEC Research Institute, Princeton, NJ.
- 1995–2000: **Research Assistant**, ETH (Swiss Federal Technical University) Zürich, Switzerland, Department of Physics and Institute of Neuroinformatics.

Education

- 2000: “**Dr. nat. sci.**” (equivalent to **PhD**), Physics Department, ETH (Swiss Federal Technical University) Zürich, Switzerland.
- 1995: “**Physik Diplom**” (equivalent to **MSc in Physics**), University of Hannover, Germany.
- 1989–1990: Chinese Language Studies, Free University of Berlin, Germany. Followed by a visit to China in summer 1991.

Grants and Fellowships

- 08-09, 2008: Fellow of the Collegium Budapest, Institute for Advanced Study, Hungary.
- 2002–2003: “Forschungsstipendium” (Research Stipend) granted by the Deutsche Forschungsgesellschaft (German Research Association).
- 1993–1994: European physics scholarship, “EMS φ S”, for studies abroad (at ETH Zürich).

Teaching Experience

Instructor (* new course development)

- S 2009: ICS 636* (planned): Information Theory in Machine Learning, University of Hawai'i, Mānoa, Department of Information and Computer Sciences. New on-line course
- S 2008: ICS 141 (planned): Discrete Mathematics, University of Hawai'i, Mānoa, Department of Information and Computer Sciences.
- F 2008: ICS 635* : Machine Learning, University of Hawai'i, Mānoa, Department of Information and Computer Sciences. New on-line course
- S 2008: ICS 491*: Introduction to Neuroinformatics and Machine Learning, University of Hawai'i, Mānoa, Department of Information and Computer Sciences.
- S 2008: ICS 141: Discrete Mathematics, University of Hawai'i, Mānoa, Department of Information and Computer Sciences.
- 2007: ICS 635* : Computational Intelligence, University of Hawai'i, Mānoa, Department of Information and Computer Sciences.
- 2006: ICS 691* : Machine Learning, University of Hawai'i, Mānoa, Department of Information and Computer Sciences.
- 2005: ICS 691* : Bioinformatics, Machine Learning and Quantitative Biology, University of Hawai'i, Mānoa, Department of Information and Computer Sciences.
- 2005-7: ICS 699: Directed reading/research, University of Hawai'i, Mānoa, Department of Information and Computer Sciences.
- 2005-7: ICS 499: Computer Project, University of Hawai'i, Mānoa, Department of Information and Computer Sciences.

Invited Lecturer

- 08/2008: Sante Fe Institute Complex Systems Summer School at the Institute of Theoretical Physics, Chinese Academy of Sciences (CAS), Beijing, China.
- 09/2008: Ecole Recherche Multimodale d'Information Techniques & Sciences (ERMITES); Universit du Sud Toulon-Var, Laboratoire des Sciences de l'Information et des Systmes, Association Franaise de la Communication Parle; Giens, France.

Teaching Assistant

- 2001, 2002: Marine Biological Laboratory, Woods Hole, MA: Methods in Computational Neuroscience, Summer Course.
- 1997–1998: ETH Zürich, Switzerland. Introduction to Computational Neuroscience.
- 1997: **Teaching Assistant and Co-organizer** of “Walking Robots” workshop, part of the NSF Workshop on Neuromorphic Engineering, Telluride, CO.

Publications

- [1] S. Still (*accepted for publication in EPL*, 2008): “Statistical mechanics approach to interactive learning”, available at arXiv:0709.1948
- [2] S. Still, J. P. Crutchfield and C. J. Ellison (*submitted*, 2007): “Optimal Causal Inference”, available at arXiv:0708.1580
- [3] S. Still, J. P. Crutchfield (*submitted*, 2007): “Structure or Noise?” , available at arXiv:0708.0654
- [4] S. Still, K. Hepp and R. J. Douglas (2006): “Neuromorphic Walking Gait Control.” *IEEE Transactions on Neural Networks*; **17** (2), 496–508.
- [5] S. Still and W. Bialek (2004): “How many clusters? An information theoretic perspective.” *Neural Computation*, **16**, 2483–2506.
- [6] S. Still, W. Bialek and L. Bottou (2004): “Geometric Clustering using the Information Bottleneck method.” In: *Advances In Neural Information Processing Systems 16*, S. Thrun, L. K. Saul and B. Schölkopf (Editors), MIT Press, Cambridge, MA.
- [7] E. Schneidman, S. Still, M. J. Berry II and W. Bialek (2003): “Network information and connected correlations.” *Phys. Rev. Lett.* 91, 238701.
- [8] S. Still, B. Schölkopf, K. Hepp and R. J. Douglas (2001): “Four-legged Walking Gait Control Using a Neuromorphic Chip Interfaced to a Support Vector Learning Algorithm.” In: *Advances in Neural Information Processing Systems 13*, T. K. Leen, T. Dietterich, and V. Tresp (Editors), MIT Press, Cambridge, MA, pp. 741-747.
- [9] S. Still and G. LeMasson (1999): “Traveling waves in a ring of three inhibitory coupled model neurons.” *Neurocomputing*, **26-27**, 533-539.
- [10] S. Still and M.W. Tilden (1998): “Controller for a four legged walking machine.” In: *Neuromorphic Systems: Engineering Silicon from Neurobiology*, L.S. Smith, A. Hamilton (Editors), World Scientific.

Technical Reports

- [11] S. Still and W. Bialek (2006): “Active Learning and optimal predictions”. Technical Report, University of Hawaii, Manoa, Honolulu, USA.

Theses

- [12] S. Still (2000): “Walking gait control for four-legged robots.” PhD Thesis, ETH Zürich, Department of Physics.

- [13] S. Still (1995): "Characterization and Optimization of Lithium-Carbon-Intercalation Electrodes for the use in Lithium-Ion-Exchange Batteries." Diplomarbeit (MSc), University of Hannover, Department of Physics.

Conferences

- [14] S. Still, M. Dinculescu and D. Precup (2006), "An Information Theoretic Approach for Building Approximate Predictive Models", workshop on "Grounding Sensation, Knowledge, and Cognition in Sensori-Motor Experience" at Neural Information Processing Systems 19, Vancouver, BC, Canada.
- [15] S. Still (2006), "Active learning and optimal behavior", workshop on "Value of Information in Inference, Learning and Decision-Making" at Neural Information Processing Systems 18, Vancouver, BC, Canada.
- [16] S. Still, A. K. Schenk, B. D. Wright, A. J. Doupe and W. Bialek (2001), "Information theoretic approaches to the analysis of complex natural sounds", presented at the Gordon Conference "Sensory Coding and the Natural Environment – Probabilistic models of perception", Mount Holyoke College, MA, USA.
- [17] S. Still and M.W. Tilden (1998), "Coupled Oscillators and Walking Control: A Hardware Implementation of a Distributed Motor System." In: *Proceedings of the 26th Göttingen Neurobiology Conference, Volume 2*, N. Elsner and R. Wehner (Editors), Georg Thieme Verlag Stuttgart.
- [18] C. Collin and S. Still (1998), "Towards a Neuronally-Controlled Walking Machine." 2nd International Conference on Cognitive and Neural Systems, Boston, MA, USA.

Invited Talks

- 10/08 **Max Planck Institute for Biological Cybernetics**, Machine Learning Seminar, Tübingen, Germany.
- 09/07 **University of Montreal**, Montreal, Canada. Department of Computer Science.
- 09/07 **McGill University**, Montreal, Canada. *McGill-UdeM-MITACS* Machine Learning Seminar.
- 03/07 **University of California at Davis**, Computational Science and Engineering Center, Davis, CA.
- 01/07 **TU Munich**, Institute of Computer Science, Munich, Germany.
- 01/07 **ETH Zürich**, Institute for Neuroinformatics, Zürich, Switzerland.
- 01/07 **IDSIA**, Institute for Artificial Intelligence (Istituto Dalle Molle di Studi sull'Intelligenza Artificiale), Lugano, Switzerland.

- 01/07 **ETH Zürich**, Institute of Computer Sciences, Zürich, Switzerland.
- 07/06 **Max Planck Institute for Biological Cybernetics**, Tübingen, Germany.
- 06/06 **McGill University**, Montreal, Canada. Department of Computer Science.
- 10/05 **University of Hawai'i, Mānoa**, Honolulu, HI, Medical Informatics, ICS.
- 9/05 **University College Dublin**, Dublin, Ireland.
- 4/05 **University of Hawai'i, Mānoa**, Honolulu, HI, Department of Mathematics, Seminar.
- 4/05 **University of Hawai'i, Hilo**, Hilo, HI, Department of Computer Science.
- 4/05 **University of Hawai'i, Mānoa**, Honolulu, HI, Department of Electrical Engineering.
- 4/03 **Columbia University**, New York, NY, Applied Mathematics Seminar.
- 3/03 **University of British Columbia**, Vancouver, Canada, Department of Physics.
- 8/03 **Humboldt University**, Berlin, Germany, Theoretical Biology Seminar.
- 8/03 **Hamilton Institute, National University of Ireland**, Maynooth, Ireland. Machine Learning and Cognitive Neuroscience Seminar.
- 8/03 **University of Hawai'i**, Honolulu, HI. Department of Electrical Engineering.
- 7/03 **Max Planck Institute for Biological Cybernetics**, Tübingen, Germany, Machine Learning Seminar.
- 7/03 **ETH Zürich**, Switzerland, Institute for Neuroinformatics.
- 1998 **Max Planck Institute of Fluid Dynamics**, Göttingen, Germany.
- 1998 **Max Planck Institute of Biological Cybernetics**, Tübingen, Germany.

Invited Talks at Conferences and Workshops

- 04/06 **Bellairs Reinforcement Learning Workshop**, Barbados.
- 12/05 Workshop on "Models of Behavioral Learning" at **Neural Information Processing Systems (NIPS) Conference**, Vancouver, BC, Canada.
- 7/04 **KITP Santa Barbara**, Institute for Theoretical Physics, University of California, Santa Barbara, CA.
- 12/98 Workshop on "Learning Chips and Neurobots", "**Neural Information Processing Systems (NIPS) Conference**" Breckenridge, CO.

Contributed Talks at Conferences

- 12/05 **“Neural Information Processing Systems” Conference Workshop** on “Value of Information in Inference, Learning and Decision-Making”, Whistler, BC, Canada.
- 12/03 **“Neural Information Processing Systems” Conference** (Spotlight Presentation, Acceptance: 9%), Vancouver, BC, Canada.
- 12/02 **“Neural Information Processing Systems” Conference Workshop** on “Bio-Informatics”, Whistler, BC, Canada.

Invited Participant in Workshops

- 04/2009: NSF: Opportunities and Challenges in Uncertainty Quantification for Complex Interacting systems, University of Southern California, April 12-14 2009.
- 1999: Snowbird Learning Workshop, Snowbird, Utah.

Summer Schools

- 2001: **Physics of bio-molecules and cells**, Ecole de Physique Theorique, Les Houches, France.
- 1999: **Methods in Computational Neuroscience**, Marine Biological Laboratory, Woods Hole, MA.
- 1997: **Crete Course in Computational Neuroscience**, Institute of Applied Computational Mathematics, Heraklion, Greece.
- 1996: **NSF Workshop on Neuromorphic Engineering**, Telluride, CO.

Languages

English and German fluent.

Formal language education (but no current fluency) in:

Chinese (1989/90), Free University of Berlin, Germany.

Russian (2001) and Spanish (2002), Princeton University.

French (1987) and Latin (1980-1989), High School, Germany.

Other interests and activities

Part of the “PRO-SCIENCE” initiative (2005), an appeal to German politics to improve the academic situation at German Universities. Published and supported by the German Magazine “Karriere” (“Career”), and supported by the German academic exchange service, “DAAD”.

Literature, Creative Writing, Contemporary Dance, Visual Art, Swimming, Scuba, Surfing, Travel, Wilderness, Photography.