Susanne Still

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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

2002–2003: "Forschungsstipendium" (Research Stipend) granted by the Deutsche Forschungs Gesellschaft (German Research Association).

1993–1994: European physics scholarship, "EMSφS", for studies abroad (at ETH Züerich).

Teaching Experience

Instructor (* new course development)

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.

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 (*submitted*, 2007): "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. Schlkopf (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". Technichal 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 Litium-Ion-Exchange Batteries." Diplomarbeit (MSc), University of Hannover, Department of Physics.

Conferences

[14] S. Still, M. Dinculescu and D. Precup, "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, "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, "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, "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, "Towards a Neuronally-Controlled Walking Machine." 2nd International Conference on Cognitive and Neural Systems, Boston, MA, USA.

Invited Talks

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 **Technical University 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.

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.

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.

7/04 **KITP Santa Barbara**, Institute for Theoretical Physics, University of California, Santa Barbara, CA.

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.

12/98 **"Neural Information Processing Systems" Conference Workshop** "Learning Chips and Neurobots", Breckenridge, CO.

1998 **Max Planck Institute of Fluid Dynamics**, Göttingen, Germany.

1998 **Max Planck Institute of Biological Cybernetics**, Tübingen, Germany.

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.

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, 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.