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Curriculum Vitae

Name: Nicole Voges
Date of birth: March 17th, 1971
Place of birth: Hannover/Langenhagen, Germany

Education:

1990 Abitur at Matthias-Claudius-Gymnasium Gehrden, Hannover
1990–2001 **studies in physics (Dpl)**, Carl von Ossietzky University Oldenburg
1995/6 internship 'Physical measurement and digital signal processing'
1998/9 student project 'Statistical analysis of the energy dissipation rate in a turbulent free jet'
2000/1 diploma thesis on 'Classification of spike trains of retinal ganglion cells'.
The thesis was part of the SFB project 517 *Neurocognition*

Work/Research experience:

2001–2002 Employee in Testing and QA in the R&D department of the SER Technology Deutschland GmbH
2003–2007 **PhD studies**, Dept. of Neurobiology and Biophysics, Albert-Ludwigs-University, Freiburg (supervisors: A. Aertsen & S. Rotter)
2004–2006 stipend of the Institute for Frontier Areas of Psychology and Mental Health, Dept. of Theory and Data Analysis
2007 completion of PhD studies at the Bernstein Center for Computational Neuroscience, Freiburg. PhD in July 2007.

Work/Research experience, continued

- November'07 – May'09 **post doctoral position**, INCM, UMR6193 CNRS – Université de la Méditerranée, Marseille (supervisors: L. Perrinet & G. Masson). The work was part of the European project called FACETS.
- June'09 – June'10 **post doctoral position**, in collaboration between INRIA Sophia Antipolis (supervisor: M. Clerc) and INSERM U751, Marseille (supervisor: C. Bénar)
- since October'10 **post doctoral position**, Universitäts-Augenklinik, Ophthalmology/ Visual Function, Freiburg

Publications, papers

- 2007 Voges N., Aertsen A., Rotter S. (2007), Statistical analysis of spatially embedded networks: From grid to random node positions. *Neurocomputing* 70(10–12), pp 1833–1837
- Voges N., Aertsen A., Rotter S., Statistical analysis of spatially embedded network models ranging from regular to random, still in preparation
- 2009 Voges N., Perrinet L. (2009), Phase space analysis of networks based on biologically realistic parameters, *Journal of Physiology – Paris* (104), pp 51–60
- Voges N., Perrinet L., Recurrent cortical networks with realistic horizontal connectivities show complex dynamics, in preparation, preliminary results were presented at the COSYNE 2009 and the CNS 2009
- 2010 Voges N., Guijarro C., Aertsen A., Rotter S. (2010), Models of cortical networks with long-range patchy projections, *Journal of Computational Neuroscience* 28(1), pp 137–154
- 2010 Voges N., Schüz A., Aertsen A., Rotter S. (2010), A modeler's view on the spatial structure of horizontal neuronal connectivity in the neocortex, *Progress in Neurobiology* 92, pp 277–292
- 2010 Blanchard S., Papadopoulo T., Bénar C., Voges N., Clerc M., Benali H., Warnking J., David O., Wendling F. (2010), Comparing biophysical models of BOLD signal: a parameter sensitivity analysis, accepted for publication in *Brain Topography*
- 2010 Voges N., Blanchard S., Wendling F., Benali H., David O., Papadopoulo T., Clerc M., Bénar C. (2010), Application of an hemodynamic model to epileptic spikes: linearity and negative BOLD responses, submitted to *NeuroImage*

Conference proceedings

- 2000 Ammermüller J., Grenscher M., Voges N., Bongard M. (2000), Stimulus feature extraction from the ensemble activity of retinal ganglion cells: Experiments using periodic stimuli with and without external information, and stimuli simulating microscopic eye movements. Baratoff G., Neuman, H. (eds) Dynamic perception. Proceedings in artificial intelligence vol.9. Akad.Verlag, Berlin, pp 159–162
- 2008 Voges N., Perrinet L. (2008), Analyzing cortical network dynamics with respect to different connectivity assumptions. Perrinet, L., Daucé E. (eds) Proceedings of the 2nd french conference on Computational Neuroscience, pp 299–301
- 2010 Voges N., Blanchard S., Wendling F., Benali H., David O., Papadopoulo T., Clerc M., Bénar C. (2010), Application of a hemodynamic model to epileptic spikes, Proceedings NeuroComp 2010, Lyon, France.

Conference contributions

- 1999 Voges N., Reisner B., Renner C., Peinke J. (1999), On Markov properties of the energy dissipation rate in turbulence, spring conference of the German Physical Society, Münster
- 2000 Grenscher M., Voges N., Ammermüller J. (2000), Stimulus feature extraction from the ensemble activity of retinal ganglion cells: Experiments simulating microscopic eye movements, 28th Göttingen Neurobiology Conference
- 2000 Ammermüller J., Bongard M., Rujan P., Voges N. (2000), Decoding of visual stimulus features from the intrinsic activity of retinal ganglion cell populations, 23rd European Conference on Visual Perception, Groningen
- 2005 Voges N., Aertsen A., Rotter S. (2005), Statistical analysis and modeling of cortical network architecture based on neuroanatomical data, 30th Göttingen Neurobiology Conference
- 2006 Voges N., Aertsen A., Rotter S. (2006), Neuroanatomy-based models of cortical networks, Federation of European Neuroscience Societies Forum, Vienna
- 2006 Voges N., Aertsen A., Rotter S. (2006), Anatomy-based network models of cortex and their statistical analysis, 15th Computational Neuroscience Meeting, Edinburgh
- 2007 Voges N., Guijarro C., Aertsen A., Rotter S. (2007), Cortical networks with long-range patchy connections, 31th Göttingen Neurobiology Conference
- 2008 Voges N., Kremkow J., Perrinet L. (2008), Analyzing cortical network dynamics with respect to spatially realistic connectivities, Federation of European Neuroscience Societies Forum, Genève

- 2008 Voges N., Perrinet L. (2008), Analyzing cortical network dynamics with respect to different connectivity assumptions, 2nd french conference on Computational Neuroscience, Marseille
- 2009 Voges N., Perrinet L. (2009), Dynamical state spaces of cortical networks representing various horizontal connectivities, Computational and Systems Neuroscience 2009, Salt Lake City
- 2009 Voges N., Perrinet L. (2009), Dynamics of cortical networks including long-range patchy connections, 32th Göttingen Neurobiology Conference
- 2009 Voges N., Perrinet L. (2009), Recurrent cortical networks with realistic horizontal connectivities show complex dynamics, 18th Computational Neuroscience Meeting, Berlin
- 2010 Voges N., Blanchard S., Wendling F., Benali H., David O., Papadopoulo T., Clerc M., Bénar C. (2010), Investigation of BOLD responses to epileptic spikes: a combined modeling & data analysis approach, Human Brain Mapping, Barcelona
- 2010 Voges N., Blanchard S., Wendling F., Benali H., David O., Papadopoulo T., Clerc M., Bénar C. (2010), Application of a hemodynamic model to epileptic spikes, Neurocomp, Lyon

Teaching & Reviewing

- 2002-2007 regular supervision of student seminar 'Brain & Cognition'
- winter term 2004,2005 tutor for exercises in 'Introduction to Neurobiology and Biophysics III: Measurement and Model', Dept. of Neurobiology & Biophysics, Biology III, Albert-Ludwigs-University, Freiburg
- 2006/7 co-supervision of diploma student C. Guijarro
- October 2006 tutor for exercises in 'Analysis and Models in Neurophysiology', NWG-Course, Albert-Ludwigs-University, Freiburg
- October 2006 tutor for exercises in 'Neurophysiology I: Measurement and Analysis of Neuronal Activity', Dept. of Neurobiology & Biophysics, Biology III, Albert-Ludwigs-University, Freiburg
- February 2010 reviewer for Cerebral Cortex

Invited talks

- November 2004 'How to model cortical long-range patchy connections?' at the Max-Planck-Institut für biologische Kybernetik, Tübingen (invited by A. Schüz)
- 2007 'Statistical analysis of cortical networks with long-range patchy connections'
- March at the INCM – CNRS, Marseille (invited by L. Perrinet and G. Masson)

April	at the Institute of Neuroinformatics, University/ETH Zürich (invited by R. Douglas)
July	at the Newcastle University (invited by M. Kaiser and T. Binzegger)
January 2009	'Statistical analysis & dynamics of cortical networks based on neuroanatomical data' at INRIA Sophia Antipolis (invited by M. Clerc)
June 2010	'Explorative investigation of the neurovascular coupling in epilepsy' at the Norwegian University of Life Sciences (UMB) (invited by H.E. Plesser)

Languages & programming skills

Languages	German, English, French
Software experiences	C/C++, Matlab, Python, Tcl/Tk, NEST/PyNN, Mathematica