



Curriculum Vitae

Name: Fabian Schönfeld
Born: Nuremberg, July 25th, 1984
Email: fabian.schoenfeld@ini.rub.de

Education

Ruhr-University Bochum Since June 2016	Postdoctoral researcher	Bochum, Germany
Ruhr-University Bochum July 2010 – June 2016	PhD student <i>“A computational model of spatial encoding in the hippocampus” (magna cum laude)</i>	Bochum, Germany
FAU Chair for Computer Graphics October 2009 – February 2010	Research assistant	Erlangen, Germany
Friedrich-Alexander University October 2004 – October 2009	Diploma student Computer science with secondary subject engineering.	Erlangen, Germany
Diploma (grade: 1.1)	<u>Thesis:</u> <i>“Interactive debugging tool for the PE physics engine”</i> (grade: 1.0) <u>Oral exams:</u> Artificial intelligence (grade: 1.3); Computer graphics (grade: 1.0); Programming languages and methods (grade: 1.3), Engineering (grade: 1.0) <u>Studienarbeit:</u> <i>“A parallel 3-SAT solver on CUDA”</i> (grade: 1.0)	

Teaching experience

Ruhr-University Bochum Summer semester 2015, 2016	“Scientific Computing with Python” 2 week course; planning & supervision	Bochum, Germany
Ruhr-University Bochum September 2012 – June 2013	PhD student Bachelor thesis supervision (x3)	Bochum, Germany
Schülerkolleg Schwabach March 2007 – June 2010	Tutor (Mathematics, Physics)	Schwabach, Germany
Friedrich-Alexander University October 2007 – February 2008	Instructor (Algorithms, Java)	Erlangen, Germany
FAU Engineering Department April 2008 – July 2008	Advisor (Java programming)	Erlangen, Germany

Skills

Languages	German (native), English (fluent), French (elementary)
Programming	Python (fluent) C/C++, CUDA, Java, VHDL (proficient) Assembler, Scheme, Prolog (familiar)
Education	3D-CAD, 3D Modeling (3DS Max, Blender), algorithm design, artificial intelligence, computer graphics, GPU programming (CUDA), hardware programming (FPGAs), LaTeX, machine learning (reinforcement learning, slow feature analysis), object-oriented programming, parallel computing, software development.
Soft skills	Activity management, interdisciplinary work & communication, problem analysis, research & information gathering, sociable in professional settings, task organization & coordination.

Awards & Certificates

- ❖ Outstanding performance in Algorithm Design (award, FAU Erlangen)
- ❖ Advanced scientific programming in Python (Summer school, Zurich)
- ❖ Scientific writing DAAD spring school (workshop, Bochum)
- ❖ Science communication and media skills training (workshop, Bochum)
- ❖ Intercultural communication: How to work together in an inter. team (workshop, Bochum)

Publications

Fabian Schönfeld (2016) A Computational Model of Spatial Encoding in the Hippocampus. PhD thesis.

Fabian Schönfeld and Laurenz Wiskott (2015) Modeling place field activity with hierarchical slow feature analysis. *Frontiers in Computational Neuroscience*, 9:51.

Sijie Zhang, Fabian Schönfeld, Laurenz Wiskott, and Denise Manahan-Vaughan (2014) Spatial representations of place cells in darkness are supported by path integration and border information, *Frontiers in Behavioral Neuroscience*, 8:222.

Fabian Schönfeld and Laurenz Wiskott (2013) RatLab: an easy to use tool for place code simulations. *Frontiers in Computational Neuroscience*, 7:104.

Fabian Schönfeld, Quirin Meyer, Marc Stamminger and Rolf Wanka (2010) 3-SAT on CUDA: Towards a massively parallel SAT solver. *High Performance Computing and Simulation (HPCS)*, Caen, France, 306-313.

Abstracts / posters:

Fabian Schönfeld and Laurenz Wiskott (2012) Sensory integration of place and head-direction cells in a virtual environment. *NeuroVisionen 8*, Aachen, Germany.

Fabian Schönfeld and Laurenz Wiskott (2012) Sensory integration of place and head-direction cells in a virtual environment. *8th FENS Forum of Neuroscience*, Barcelona, Spain.

Fabian Schönfeld (2010) Der Physik-Engine Editor ped. *Informatiktage 2010*, Bonn, 97-100.

In submission:

Sijie Zhang, Fabian Draht, Fabian Schönfeld, Laurenz Wiskott, and Denise Manahan-Vaughan (2016) Spatial representations by place fields in darkness in the absence of reliable external sensory cues is supported by path integration.

Transcript of records

Programming	Algorithms (I-III, Stoyan, Wilke, and Greiner), Cluster computing (Veldema), Computer graphics (Grosso), Interactive computer graphics (Stamminger), Parallel algorithms (Veldema), Software systems (I-III, Kleinöder, Meyer-Wegener, and Saglietti).
Theoretical	Advanced graphics algorithms (Dachsbacher), Artificial intelligence (I-II, Stoyan), Computer engineering (I-IV, Teich, Huemer, and German), Geometric modeling (Greiner), Mathematics for engineers (I-IV, Klamroth, Strauß and Graef), Theoretical computer science (I-III, Pflaum, Wanka, and Strehl).
Engineering	3D-CAD introduction and product development (Meerkamm), Integrated product development (Meerkamm), Methods and computer-aided design (Meerkamm), Production-ready design (Meerkamm), Technical drawing (Paetzold), Design theory (Paetzold).
Seminars	Exploration and path planning with robots (Teich), GameAI (Ludwig), GraPa: Graphics programming and application (Stamminger and Enders), Modelling and simulation (Moor), Multicore processing (Dutta).
Neuroscience	Computational neuroscience: neural dynamics (Schöner), Computational neuroscience: vision and Memory (Wiskott), From Molecules to Cognition (IGSN faculty members), Machine Learning (Wiskott), Mathematics for modeling and data analysis (Wiskott), Spatial navigation and memory (Yoshida), as well as 35 IGSN symposia & colloquia.