

FABIAN SCHUHMANN

PERSONAL INFORMATION

Born in Freising, Germany, 7th May 1991

email fabian.schuhmann@nbi.ku.dk

website fabianschuhmann.github.io

EMPLOYMENT HISTORY

research assistant	2023-now · Niels Bohr Institute, University of Copenhagen · post-doc researcher in the group of Prof. Dr. Weria Pezeshkian
research assistant	2023-2023 · Carl von Ossietzky University Oldenburg · post-doc researcher in the group of Prof. Dr. Dr. Ilia A. Solov'yov
research assistant	2020-2023 · Carl von Ossietzky University Oldenburg · Ph.D. student in the group of Prof. Dr. Dr. Ilia A. Solov'yov
teaching assistant	2017-2019 · Ruhr-University Bochum · tutor for different mathematics service lectures for Prof. Dr. Heinzner, Dr. Jörg Härterich, and AOR PD Dr. Kacso
assistant	2015-2019 · Hochschule Bochum · assistant with the "Institut für Mathematik und Technikdidaktik" for Prof. Dr. Mike Scherfner
teaching assistant	2015-2019 · Hochschule Bochum · tutor for mathematics for economists for Prof. Dr. Skill

EDUCATION

Ph.D.	2020-2023 · CARL VON OSSIETZKY UNIVERSITY OLDENBURG · Institute of Physics Thesis: <i>Spotting The Difference - Tailored Tools to Analyze Protein Dynamics</i> ; graduated 'summa cum laude' Advisor: Prof. Dr. Dr. Ilia A. Solov'yov
Master of Science	2017-2019 · RUHR UNIVERSITY BOCHUM · Faculty of Mathematics Thesis: <i>Dynamics of billiards with emphasis on the length of the shortest periodic billiard trajectory</i> Advisor: Prof. Dr. Alberto Abbondandolo
Bachelor of Science	2013-2016 · RUHR UNIVERSITY BOCHUM · Faculty of Mathematics Thesis: <i>Das Brunn-Minkowski Theorem und die isoperimetrische Ungleichung</i> Advisor: Prof. Dr. Alberto Abbondandolo
Bachelor of Science	2011-2016 · RUHR UNIVERSITY BOCHUM · Faculty of Economics Thesis: <i>Globaler Umweltschutz als Problem der privaten Bereitstellung eines öffentlichen Gutes</i> Advisor: Prof. Dr. Julio. R. Robledo

PUBLICATIONS

ACROSS ATOMS TO CROSSING CONTINENTS: APPLICATION OF SIMILARITY MEASURES TO BIOLOGICAL LOCATION DATA

Fabian Schuhmann, Leonie Ryvkin, James D. McLaren, Luca Gerhards, Ilia A. Solov'yov

Plos ONE 2023, Volume 18, p. e0284736

EFFECTS OF DYNAMICAL DEGREES OF FREEDOM ON MAGNETIC COMPASS SENSITIVITY: A COMPARISON OF PLANT AND AVIAN CRYPTOCHROMES

Gesa Grüning, Siu Ying Wong, Luca Gerhards, Fabian Schuhmann, Daniel R. Kattnig, P. J. Hore, Ilia A. Solov'yov

Journal of the American Chemical Society 2022, Volume 144, p. 22902-22914

ON THE ENERGETIC DIFFERENCES OF AVIAN CRYPTOCHROMES 4 FROM SELECTED SPECIES

Maja Hanić, Anders Frederiksen, Fabian Schuhmann, Ilia A. Solov'yov

The European Physical Journal D 2022, Volume 76, p. 198

THE SAME, BUT DIFFERENT, BUT STILL THE SAME: STRUCTURAL AND DYNAMICAL DIFFERENCES OF NEUTROPHIL ELASTASE AND CATHEPSIN G

Fabian Schuhmann, Xiangyin Tan, Luca Gerhards, Heloisa N. Bordallo, Ilia A. Solov'yov

The European Physical Journal D 2022, Volume 76, p. 126

COMPUTATIONAL RECONSTRUCTION AND ANALYSIS OF STRUCTURAL MODELS OF AVIAN CRYPTOCHROME 4

Maja Hanić, Fabian Schuhmann, Anders Frederiksen, Corinna Langebrake, Georg Manthey, Miriam Liedvogel, Jingjing Xu, Henrik Mouritsen, Ilia A. Solov'yov

Journal of Physical Chemistry B 2022, Volume 126, p. 4623-4635

THE TRANSITION OF PHOTORECEPTOR GUANYLATE CYCLASE TYPE 1 TO THE ACTIVE STATE

Manisha Kumari Shahu, Fabian Schuhmann, Alexander Scholten, Ilia A. Solov'yov, Karl-Wilhelm Koch

International Journal of Molecular Sciences 2022, Volume 23, p. 4030

NAVIGATION OF MIGRATORY SONGBIRDS: A QUANTUM MAGNETIC COMPASS SENSOR

Siu Ying Wong, Anders Frederiksen, Maja Hanić, Fabian Schuhmann, Gesa Grüning, P. J. Hore, Ilia A. Solov'yov

Neuroforum 2021, Volume 27, Issue 3, p. 141-150

EXPLORING POST-ACTIVATION CONFORMATIONAL CHANGES IN PIGEON CRYPTOCHROME 4

Fabian Schuhmann, Daniel R. Kattnig, Ilia A. Solov'yov

The Journal of Physical Chemistry B 2021, Volume 125, Issue 34, p. 9652-9659 (chosen for cover)

INTRODUCING PEP McCONST—A USER-FRIENDLY PEPTIDE MODELER FOR BIOPHYSICAL APPLICATIONS

Fabian Schuhmann, Vasili Korol, Ilia A. Solov'yov

Journal of Computational Chemistry 2021, Volume 42, Issue 8, p. 572-580

PRESENTATIONS / POSTERS

Cambridge, United Kingdom

INTRODUCING SiMBOLS - SIMILARITY MEASURES FOR BIOLOGICAL SYSTEMS
Isaac Newton Institute, Workshop: USMWo2 2023

Kraków, Poland

INTRODUCING SiMBOLS - SIMILARITY MEASURES FOR BIOLOGICAL SYSTEMS
BioNano 8, 2023

<i>Egmond aan Zee, Netherlands</i>	ALISE: AN IMPROVED AND AUTOMATED VIRTUAL DRUG SCREENING PROCEDURE BioSB, 2023
<i>Amsterdam, Netherlands</i>	THE SAME, BUT DIFFERENT – DISCOVERING DIFFERENCES BETWEEN NEUTROPHIL ELASTASE AND CATHEPSIN G SIAM CSE 2023, 2023
<i>Borstel, Germany</i>	INTRODUCING SiMBOLS - SIMILARITY MEASURES FOR BIOLOGICAL SYSTEMS 14th North German Biophysics Meeting, 2023
<i>Oldenburg, Germany</i>	COARSE GRAINED PIGEON CRYPTOCHROME AND ITS CONFORMATIONAL CHANGES ERC Quantum Birds, 2023
<i>Copenhagen, Denmark</i>	THE SAME, BUT DIFFERENT – DISCOVERING DIFFERENCES BETWEEN NEUTROPHIL ELASTASE AND CATHEPSIN G ISBUC Symposium, 2022
<i>Heidelberg, Germany</i>	THE SAME, BUT DIFFERENT – DISCOVERING DIFFERENCES BETWEEN NEUTROPHIL ELASTASE AND CATHEPSIN G ECMTB 2022, 2022
<i>Copenhagen, Denmark</i>	THE SAME, BUT DIFFERENT – DISCOVERING DIFFERENCES BETWEEN NEUTROPHIL ELASTASE AND CATHEPSIN G Topical Meeting 2022, 2022
<i>Paris, France</i>	CONFORMATIONAL CHANGES IN PIGEON CRYPTOCHROME 4 FENS 2022, 2022
<i>Exeter, United Kingdom</i>	CONFORMATIONAL CHANGES IN PIGEON CRYPTOCHROME 4 Living Systems Institute Ph.D. Seminar, 2022
<i>Oxford, United Kingdom</i>	CONFORMATIONAL CHANGES IN PIGEON CRYPTOCHROME 4 ERC Quantum Birds, 2022
<i>Santa Margherita Ligure, Italy</i>	VIKING AND ITS FEATURED MULTISCALE TOOLS DySon-ISACC 2021, 2021
<i>Copenhagen, Denmark</i>	CONFORMATIONAL CHANGES IN PIGEON CRYPTOCHROME 4 Topical Meeting 2021, 2021
<i>Copenhagen, Denmark</i>	USER-FRIENDLY PEPTIDE MODELER FOR BIOPHYSICAL APPLICATIONS Topical Meeting 2021, 2020

TEACHING EXPERIENCE

<i>(Co)-supervisor</i>	· (Co)-supervision of 2 Bachelor students
<i>Teacher</i>	2023 · Carl von Ossietzky University Oldenburg · In charge of a semester- accompanying introduction to Python and teaching assistant for the module “Einführung in die theoretische Physik”
<i>Teacher</i>	2021 · Carl von Ossietzky University Oldenburg · In charge of a two- weeks mathematics course to bridge the gap between school mathematics and university mathematics
<i>Tutor</i>	2020 · Carl von Ossietzky University Oldenburg · Mathematical Modelling for future teachers · summer term 2020
<i>Tutor</i>	2017-2019 · Ruhr University Bochum Mathematics for Biologists · winter term 18/19 Mathematics for Engineers II · summer term 18 Mathematics for Engineers I · winter term 17/18
<i>Assistant</i>	2016-2018 · Hochschule Bochum · ‘Institut für Mathematik und Technikdi-

daktik’.

Tutor

2015-2019 · Hochschule Bochum · Mathematics for Economists

GRANTS, HONORS AND AWARDS

08/2023 · Mathematical mechanical biology: old school and new school, methods and applications, Cambridge · Award covering the workshop registration fee

02/2023 · SIAM CSE 2023, Amsterdam · received SIAM Travel Award and ESMTB Travel Award

10/2022 · Invited presenter at the ISBUC Symposium in Copenhagen

05/2022 · Research stay at the Living Systems Institute, University of Exeter · guest of Dr. Daniel Kattnig · Funded by the German Academic Exchange Service (DAAD), Program: 57595508

01/2022 · assisted in writing a successful high performance computing application to HLRN (NPL 910,000, eqv. 241,800€)

PROFESSIONAL SERVICE

2021-2023 · Doctoral representative on the board of the Research Training School “GRK 1885 - Molecular Basis of Sensory Biology”
Carl von Ossietzky University Oldenburg

2015-2018 · Member of the Faculty Council Mathematics
Ruhr University Bochum

2014-2018 · Member of the student representations Mathematics, responsible for finances (2015-2017)
Ruhr University Bochum

COLLABORATIONS

Prof. Heloisa N. Bordallo · Niels Bohr Institute, University of Copenhagen, Denmark

Prof. Daniel R. Kattnig · Living Systems Institute, University of Exeter, United Kingdom

Dr. Leonie Ryvkin · Mathematics and Computer Science, Eindhoven University of Technology, Netherlands

ACHIEVEMENTS

02/2023 · OLTECH Certificate · Successfully passed the Ph.D. programme "Neurosensory Science and Systems"

02/2023 · SIAM Hackathon 2023, Amsterdam · Member of a team which made it to finals

REVIEW ACTIVITY

2023 · Computational and Structural Biotechnology Journal

2022 · The Journal of Physical Chemistry B

OTHER QUALIFICATIONS

Workshops and additional training

Workshop on finances and booking for the public sector

Trainer licence C for general sports

Workshop on teaching mathematics by ZAB at Ruhr University Bochum

Voluntary work

2010-2011 · Voluntary Social Year

CVJM Westbund e.V. Wuppertal

2009-2016 · Youth Badminton Trainer

TV Frisch-Auf Altenbochum e.V.

Languages

GERMAN · Native

ENGLISH · Fluent

Computer Skills

L^AT_EX · Advanced

PYTHON · Advanced

LINUX · Advanced

GIT · Basic

C++ · Basic

SLURM · Basic

TCL · Basic

October 3, 2023