Moritz Schäfer

curriculum vitæ

Personal data

Date of birth	06th of January 1992
Place of birth	Tübingen, Germany
Nationality	german

Studies/Titles

Postdoctoral Studies

2022-02 to now	at MedUni Vienna & CeMM
Advisor	Christoph Bock

Doctor of Sciences (Dr. sc. ETH Zürich)

2018-09 to 2022-02	Doctoral studies
University	ETH Zurich
Department	Biology
PhD program	Systems Biology
Supervisor	Prof. Dr. Constance Ciaudo
2021-11-05	PhD thesis defense
2022-04-13	PhD awarded
Title	One layer at a time disentangling canonical and noncanonical roles of the RNAi pathway in embryonic stem cells

Master of Science (M. Sc.)

2015-09 to 2018-05	at Technical University Berlin
Subject	Computer Science
Grade	1.1
2018-05-10	Master's thesis
Title	*PAVOOC - An AI integrated web-app for CRISPR target recommendation*
Grade	1.0
Supervisor	Prof. Dr. Manfred Opper
Assistant Supervisor	Dr. Andreas Steffen

Bachelor of Science (B. Sc.)

2012-09 to 2016-08	at Technical University Berlin
Subject	Computer Science
Grade	1.9
2013-09 to 2014-02	at University of La Laguna, Spain
2015-09 to 2016-05	at Jiao Tong University Shanghai

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2016-05-17 Bachelor's thesis at Jiao Tong University

Title *Intercultural comparison of emotion recognition with EEG - A first attempt*

Grade 1.3

Supervisor Prof. Dr. Bao Liang Lu (SJTU Shanghai)

Prof. Dr. Benjamin Blankertz (TU Berlin)

Education

2008-09 to 2011-06 at Gewerbliche Schule Tübingen, Germany

2011-06-07 German Abitur with honors

Grade 1.2

Publications

2022 Madlen Müller*, **Moritz Schaefer***, Tara Fäh, Daniel Spies, Victoria Hermes, Richard Patryk Ngondo, Rodrigo Peña-Hernández, Raffaella Santoro, and Constance Ciaudo. Argonaute proteins regulate a specific network of genes through klf4 in mouse embryonic stem cells. *Stem Cell Reports*, volume 17, pages 1070–1080, 2022.

2022 Madlen Müller, Tara Fäh, **Moritz Schaefer**, Victoria Hermes, Janina Luitz, Patrick Stalder, Rajika Arora, Richard Patryk Ngondo, and Constance Ciaudo. Ago1 regulates pericentromeric regions in mouse embryonic stem cells. *Life Science Alliance*, volume 5, page e202101277, 2022.

2022 Marco Grodzki, Andrew P. Bluhm, **Moritz Schaefer**, Abderrahmane Tagmount, Max Russo, Amin Sobh, Roya Rafiee, Chris D. Vulpe, Stephanie M. Karst, and Michael H. Norris. Genome-scale CRISPR screens identify host factors that promote human coronavirus infection. *Genome Medicine*, volume 14, page 10, 2022.

2021 **Moritz Schaefer**, Amena Nabih, Daniel Spies, Maxime Bodak, Harry Wischnewski, Patrick Stalder, Richard Patryk Ngondo, Luz Angelica Liechti, Tatjana Sajic, Ruedi Aebersold, David Gatfield, and Constance Ciaudo. Integrative Analysis Allows a Global and Precise Identification of Functional miRNA Target Genes in mESCs. *bioRxiv (in revision)*, 2021.

2020 **Moritz Schaefer** and Constance Ciaudo. Prediction of the miRNA Interactome - Established Methods and Upcoming Perspectives. *Computational and Structural Biotechnology Journal*, volume 18, pages 548–557, 2020.

2018 **Moritz Schaefer**, Djork-Arne Clevert, Bertram Weiss, and Andreas Steffen. PAVOOC: Designing CRISPR sgRNAs using 3D Protein Structures and Functional Domain Annotations. *Bioinformatics*, 2018.

2017 Si-Yuan Wu, **Moritz Schaefer**, Wei-Long Zheng, Bao-Liang Lu, and Hiroshi Yokoi. Neural patterns between Chinese and Germans for EEG-based emotion recognition. *8th International IEEE/EMBS Conference on Neural Engineering (NER)*, 2017.

Talks

2023-01-26 "

Applying diffusion models to protein design" @ 47th Deep Learning meetup in Vienna

Research projects

2016-10 to 2017-02	Generation of arbitrary-sized fragments for *ab initio* protein structure prediction in Rosetta
2014-10 to 2015-05	Development of a reliable multi-channel RSS measurement tool for Wireless Sensor Networks
2010-09 to 2011-04	GPGPU-accelerated ray tracing with OpenCL at "Jugend forscht"
2009-09 to 2010-04	Development of an ultrasonic range analyzer for 3D localization at "Jugend forscht"

Scholarships

2016-10 to 2018-06	Deutschlandstipendium supported by General Electrics Germany
2015-10 to 2016-10	Deutschlandstipendium supported by Carmeq GmbH

Further Qualifications

Computer skills

Bioinformatics	OMICs, Data Integration, Python/Pandas, Snakemake
Machine/Deep Learning	pytorch, scikit-learn
Operating Systems	Linux/Emacs, (Windows, macOS)
Web	React, Flask
Software	LaTeX, Inkscape/Adobe Illustrator, MS Office

Wetlab skills

(s)RNA	extraction, handling, RT-qPCR, NGS
DNA	extraction, design, cloning, PCR/screening

Teaching

Lectures	Machine Learning
Seminars	Machine Learning and Bioinformatics
Student teaching	Wet Lab teaching for lab rotation students
Course teaching	Teaching Jupyter Notebooks, sRNA-seq analysis and data integration via Zoom

Language skills

German	native language
English	fluent
Spanish	fluent
Chinese	notions, HSK3

Social commitment

AMB (academic staff representation at ETH)

2020-03 to today	Treasurer
2019-10 to 2020-09	Representative at ETH-Biology Departments Conference
2019-02 to 2020-03	Event Manager

OILS (Open Innovation in Life Sciences)

2020-10 to 2021-03 Organization and Moderation of panel discussions

- Scientists and Society - let's talk! - A panel discussion about science communication
- Open up for Open Science - A panel discussion about the state of Open Science in Zürich

Others

2019-10 to 2021-10 Organization of Systems Biology PhD program retreat

2014 to today Contribution to various open source software projects

2011-08 to 2012-09 Volunteering at school/nursery in Bolivia