

Susann Vorberg

PH.D. IN COMPUTATIONAL BIOLOGY

🏠 Tannenwaldstrasse 11, 81375 Munich 📞 31-01-1987 in Leipzig

☎ (+49) 177 6017787 | ✉ susann.vorberg@gmail.com | 📱 susannvorberg | 🌐 susannvorberg | 📄 Google Scholar



Education

PhD in Computational Biology (1.0 'magna cum laude')

Munich and Goettingen, Germany

QBM - GRADUATE SCHOOL, LUDWIG-MAXIMILIANS UNIVERSITY, MAX-PLANCK INSTITUTE FOR BIOPHYSICAL CHEMISTRY

4 yrs 3 mos: Oct. 2013 - Dec. 2017

- Thesis in the Soeding lab: Bayesian Statistical Approach for Protein Residue-Residue Contact Prediction
- Applying Bayesian statistical modeling and machine learning approaches for prediction of physical contacts between amino acid side chains in the protein structure given only sequence data of the protein family
- Working in a Linux environment with Python and R, focusing on efficient parallelizable code via C++ extensions, favouring reproducible solutions via packaging/automation and good documentation style
- Working through a full data science workflow: data preparation, explorative analysis, building predictors and models, validating assumptions, simulating synthetic data, benchmarking and visualizing data

Master of Science in Bioinformatics (1.1, among 10% best)

Munich, Germany

LUDWIG-MAXIMILIANS UNIVERSITY AND TECHNICAL UNIVERSITY

2 yrs: Oct. 2011 - Sep. 2013

- Master thesis in the Soeding lab (1.0):
Improving constraints from statistical coupling analysis for de-novo protein structure prediction using amino acid pair propensities
- Main focus on explorative data analysis and visualisation of preprocessed data to obtain meaningful insights into the research problem and building simple statistical models and predictors using R

Bachelor of Science in Bioinformatics (1.1, among 10% best)

Frankfurt am Main, Germany

JOHANN-WOLFGANG-GOETHE UNIVERSITY

3 yrs: Oct. 2008 - Sep. 2011

- Bachelor thesis with Prof. Dr Ina Koch and Dr. Christian Buning @Sanofi-Aventis Deutschland GmbH (1.0):
Homologiemodellierung, Struktur-Wirkungsbeziehungen und Selektivitätsanalyse von SGLT Transportern

Abitur (1.0)

Leipzig, Germany

MAX-KLINGER GYMNASIUM AND LAMAR COUNTY HIGH SCHOOL

13 yrs: Sept. 1997 - Jun. 2006

- Taking advanced courses English and Math
- Obtaining a High School Diploma as an exchange student in Vernon, AL, USA (Sep 2003 - May 2004)

Work Experience

Research Assistant

Munich, Germany

TECHNICAL UNIVERSITY OF MUNICH (PROF. DR. IRIS ANTES)

3mos: Jan. 2013 - Mar. 2013

Generation and analysis of docking models with Dynadock software (Bash)

Research Assistant

Munich, Germany

HELMHOLTZ ZENTRUM MUNICH (DR. IGOR TETKO)

1yr 8mos: Mar. 2012 - Oct. 2013

Data generation, development and analysis of QSAR models for biodegradability data using OCHEM

Student Trainee in Software Engineering

Frankfurt am Main, Germany

BIOScITeC GMBH

2 yrs 6 mos: Oct. 2008 - March 2011

- Development of a web portal for clients and an internal company Wiki
- Support in software development and establishment of automated software tests

Sports Soldier (parachuting)

Altenstadt Obb., Germany

BUNDESWEHR

2yrs 1mo: July 2006 - July 2008

National and international competitions, e.g. female junior world champion in accuray skydiving 2008

Skills

	BASIC	INTERMEDIATE	PRO
Programming	C++, SQL, Java, Matlab	HTML/CSS, Bash, R	Python
Frameworks		Git	Latex, Markdown
Data Viz	D3.js	matplotlib	ggplot, Plotly, Dash, R-Shiny
Environments	Windows	Mac OS, Anaconda	Linux
Languages	French		German, English

Further Education and Softskills

SOFTSKILLS

- Apr 2017 **Proposal Writing**, two-day workshop offered by science-craft with Brian Cusack *Munich*
- Nov 2016 **Grundlagen authentischer Selbstdarstellung**, one-day intensive course on presenting and rhetorics *Munich*
- Sep 2014 **Scientific Writing**, two-day workshop offered by science-craft with Brian Cusack *Munich*
- Feb 2014 **Presentation Skills**, two-day workshop offered by soft skills for science with Sabine Lerch *Munich*

MOOCs & CORRESPONDENCE COURSES

- Feb 2016 **Developing Data Products (100%)**, creating data products using Shiny, R packages and interactive graphics *John Hopkins*
- Nov 2015 **Statistical Inference (100%)**, fundamentals of inference in a practical approach *John Hopkins*
- Jun 2015 **Reproducible Research (98.8%)**, concepts and tools behind reporting modern data analyses *John Hopkins*
- May 2015 **Practical Machine Learning (100%)**, basic components of building and applying prediction functions *John Hopkins*
- April 2014 **Statistical Learning (91%)**, introduction to supervised learning, focusing on regression and classification *Stanford University*
- 2008 **Organisation of Databases (1.1)**, relational database schemes, normalisation, SQL queries *ILS*

Presentations

POSTER PRESENTATIONS AT CONFERENCES

- Dec 2016 **CASP12 Meeting**, MMseqs2, ultrafast and sensitive sequence comparison *Gaeta, Italy*
- Feb 2014 **Interact Munich Conference**, Predicting Contact Distance Probabilities Using Statistical Modeling of Amino Acid Pair Couplings *Munich, Germany*
- Oct 2012 **CADASTER Workshop**, Comparative Modeling of Biodegradability Data *Munich, Germany*
- Nov 2011 **German Conference on Chemoinformatics (GCC)**, Sodium Dependent Glucose Transporter (SGLT) 1 / 2 - Elucidating Inhibitor SAR and Selectivity using Homology Modelling and 3D QSAR Studies *Goslar, Germany*

ORAL PRESENTATIONS

- Feb 2017 **Data Visualization Meetup**, Interactive Visualization across boundaries: Plotly in R and Python *Stylight, München*
- Dec 2016 **CASP12 Meeting**, best poster award talk: MMseqs2, ultrafast and sensitive sequence comparison *Gaeta, Italy*
- Mar 2012 **26th Molecular Modelling Workshop**, Sodium Dependent Glucose Transporter (SGLT) 1 / 2 - Elucidating Inhibitor SAR and Selectivity using Homology Modelling and 3D QSAR Studies *Erlangen, Germany*

Publications

Modeling the Biodegradability of Chemical Compounds Using the Online CHEmical Modeling Environment (OCHEM)

SUSANN VORBERG, IGOR V. TETKO *2014*
Molecular Informatics 2014 33(1), 73-85

LocTree3 prediction of localization

TATYANA GOLDBERG, MAXIMILIAN HECHT, TOBIAS HAMP, TIMOTHY KARL, GUY YACHDAV, SUSANN VORBERG ET AL. *2014*
Nucleic acids research 2014 42 (W1): W350-W355

Scholarships

- 2013-2016 **QBM PhD Scholarship**, 3-year scholarship funded by German Research Foundation (DFG)
- 2012 **Deutschlandstipendium**, 1-year scholarship funded by Ludwig-Maximilians-University and IBM
- 2006 **E-fellows.net**, online Scholarship awarded for my my excellent Abitur certificate

Extracurricular

- hobbies** skydiving, badminton, hiking, travelling
- language partnership** with a syrian refugee family since beginning of 2016
- emergency responder** volunteering for my lab at the university starting in 2014
- ecology volunteering** for the turtle conservation program La Tortuga Feliz in 2011



Susann Vorberg