Jan Gleixner
Curriculum Vitae

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Education

2018 – Present **Biosciences**
PhD – TBD
Heidelberg University

2013 – 2018 **Molecular Biotechnology**
Major: Bioinformatics
Master of Science – 1.1
Heidelberg University

2010 – 2013 **Molecular Biotechnology**
Major: Bioinformatics
Bachelor of Science – 1.9
Heidelberg University

2009 **Secondary School**
Major: Math & Informatics
Abitur – 1.8
Carl-Zeiss-Gymnasium, Jena

Work Experience

Mar 2018 – exp. 2024
German Cancer Research center (DKFZ) – Michael Boutros' lab and European molecular biology laboratory (EMBL) – Oliver Stegle's group
Computational Biology
Improvement of experimental and computational methods to quantify effects on gene expression on different levels in high throughput[1]

Jun 2017 – Feb 2018
European molecular biology laboratory (EMBL) – Oliver Stegle's group
Causal Inference
Application of Invariant Causal Prediction (ICP) to single cell RNA expression CRISPR perturbation data[2]

October 2015 – December 2015
Max-Planck-Institute for Empirical Inference – Jonas Peters' group
Causal Inference
Development a likelihood score based bootstrap hypothesis test for the existence of a total causal effect in the framework of causal additive models

December 2014 – June 2015
Heidelberg University – Labs of Barbara Di Ventura and Dirk Grimm
Synthetic Biology
Improving gene therapy by engineering a split Cas9 enzyme with improved expression from self-complementary Adeno-associated virus (scAAV)

February 2014 – November 2014
iGEM team Heidelberg 2014
Synthetic Biology
Development of a standard for cloning of Intein fusion proteins and use of Intein mediated circularization for stabilization of enzymes in a team of eleven students working full time with acquired funds over a hundred thousand euro[5]

February 2011 – October 2013
Max Planck Institutes for Neurobiology and for Medical Research -- Moritz Helmstaedter's group
Application of Machine Learning
Programming of artificial neural networks to automatically segment 3D-electron microscope images of brain tissue and porting of those to GPUs; Development of features for and use of Random Forests for synapse detection

August & September 2012
Duke University — Ute Hochgeschwender's lab
Neuro-optogenetics
Internship to learn cell culture, patch clamping and other neurobiology skills by analyzing and improving a Channelrhodopsin-Aequorin fusion protein[4]

May – Juli 2010
Leibniz Institute Natural Product Research and Infection Biology -- Hans Knoell Institute
Image Analysis Automation
Development of scripts in R and MATLAB for image analysis and statistical evaluation

Juni 2009
Max Planck Institute for Biogeochemistry
Rustle Classifier Development
Literature search, preliminary experiments and their analysis by use of MATLAB and R

Language Skills

Advanced	R, data.table
Intermediate	Python, Theano/TensorFlow, Stan, Java, C++, LaTeX, bash
Basic level	Perl, MATLAB, Haskell, JavaScript, Powershell, C#, CUDA and Assembler

Publications

[1]MC Funk et al., *Aged intestinal stem cells propagate cell-intrinsic sources of inflammaging in mice*, Developmental Cell 58, 2914–2929.e7 (2023).

[2]CH Holland et al., *Robustness and applicability of transcription factor and pathway analysis tools on single-cell RNA-seq data*, Genome Biol 21, 36 (2020).

[3]M Goethe, J Gleixner, I Fita, and JM Rubi, *Prediction of Protein Configurational Entropy (Popcoen)*, J. Chem. Theory Comput. 14, 1811–1819 (2018).

[4]K Berglund et al., *Luminopsins integrate opto- and chemogenetics by using physical and biological light sources for opsin activation*, Proc Natl Acad Sci U S A 113, E358–367 (2016).

[5]MC Waldhauer, SN Schmitz, C Ahlmann-Eltze, JG Gleixner, CC Schmelas, AG Huhn, C Bunne, M Büscher, M Horn, N Klughammer, et al., *Backbone circularization of Bacillus subtilis family 11 xylanase increases its thermostability and its resistance against aggregation*, Molecular BioSystems 11, 3231–3243 (2015).

Awards & Schoolarships

2014 **iGEM – International Genetically Engineered Machines competition**
Winner team – "Ring of fire" (Heidelberg)

2012 **DAAD's (German academic exchange service) RISE worldwide program**
Full schoolarship to carry out a research internship at Duke University (NC, USA)

2011 **SYNtheSYS - Student competition on Synthetic & Systems Biology**
Winner team – "Faster than life"

2009 **Jugend forscht**
State level, 2. award