

# Christian H. Holland

PHD STUDENT

BioQuant, Heidelberg University

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*Data scientist tackling biomedical challenges*

## Education

### Bielefeld University

*Bielefeld, Germany*

BACHELOR OF SCIENCE - MOLECULAR BIOTECHNOLOGY

2011-14

- Thesis: Effect of overexpression of xanA on the growth and xanthan production of *Xanthomonas campestris* pv. *Campestris* in the laboratory and in the model

### Bielefeld University

*Bielefeld, Germany*

MASTER OF SCIENCE - GENOME BASED SYSTEMS BIOLOGY

2014-17

- Thesis: Coupling of Metabolism and Gene Regulation to identify Gene Targets in Living Cells

### RWTH Aachen

*Aachen, Germany*

PHD

2017-19

- From gene expression to pathway and transcription factor activities to acquire functional and mechanistic insight into chronic liver diseases

### Heidelberg University

*Heidelberg, Germany*

CONTINUATION OF PHD

2019-now

- From gene expression to pathway and transcription factor activities to acquire functional and mechanistic insight into chronic liver diseases

## Working Experience

### Research Center Jülich

*Jülich, Germany*

INTERNSHIP

2015 (3 month)

- Studying *Escherichia coli* metabolism with focus on the uncertainties of the biomass equation

### Alacris Theranostics GmbH

*Berlin, Germany*

INTERNSHIP

2016 (3 month)

- Application of a mechanistic model and an artificial neural network for simulation and parameter optimization of the drug response model in the context of personalized medicine

### Insilico Biotechnology AG

*Stuttgart, Germany*

MASTER STUDENT

2016-2017 (9 month)

- Coupling of Metabolism and Gene Regulation to identify Gene Targets in Living Cells

## Teaching Experience

### Bielefeld University

*Bielefeld, Germany*

STUDENT ASSISTANT JOB - MATHEMATICS FOR BIOLOGISTS

2013-15

### Bielefeld University

*Bielefeld, Germany*

STUDENT ASSISTANT JOB - STATISTICS/INFORMATICS FOR BIOLOGISTS

2013-15

## Skills

### Programming

R, PYTHON, MATLAB, BASH

### Packages

TIDYVERSE, SHINY, BOOKDOWN, PKGDOWN, TESTTHAT, PANDAS, NUMPY

### Tools

GIT, TRAVIS CI, LATEX

## Conferences Attended

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### SBMC

TALK: UNVEILING OF CONSERVED TRANSCRIPTOMICS PERTURBATION RESPONSES IN MICE AND HUMAN

Bremen, Germany

2018

### RECOMB/ISCB

POSTER: UNVEILING OF CONSERVED TRANSCRIPTOMICS PERTURBATION RESPONSES IN MICE AND HUMAN

New York City, USA

2018

### ISMB/ECCB

POSTER: ROBUSTNESS AND APPLICABILITY OF FUNCTIONAL GENOMIC TOOLS ON SCRNA-SEQ DATA

Basel, Switzerland

2019

## Selected Publications

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1. **Christian H. Holland**, J Tanevski, J Perales-Patón, J Gleixner, MP Kumar, E Mereu, BA Joughin, O Stegle, DA Lauffenburger, H Heyn, B Szalai, and J Saez-Rodriguez (Feb. 2020). Robustness and applicability of transcription factor and pathway analysis tools on single-cell RNA-seq data. *Genome Biology* **21**(1).
2. Tajti, F, C Kuppe, A Antoranz, MM Ibrahim, H Kim, F Ceccarelli, **Christian H. Holland**, H Olauson, J Floege, LG Alexopoulos, R Kramann, and J Saez-Rodriguez (Feb. 2020). A Functional Landscape of CKD Entities From Public Transcriptomic Data. *Kidney International Reports* **5**(2), 211–224.
3. Ghallab, A, M Myllys, **Christian H. Holland**, A Zaza, W Murad, R Hassan, YA Ahmed, T Abbas, EA Abdelrahim, KM Schneider, M Matz-Soja, J Reinders, R Gebhardt, ML Berres, M Hatting, D Drasdo, J Saez-Rodriguez, C Trautwein, and JG Hengstler (Dec. 2019). Influence of Liver Fibrosis on Lobular Zonation. *Cells* **8**(12), 1556.
4. Szalai, B, V Subramanian, **Christian H. Holland**, R Alföldi, LG Puskás, and J Saez-Rodriguez (Sept. 2019). Signatures of cell death and proliferation in perturbation transcriptomics data—from confounding factor to effective prediction. *Nucleic Acids Research* **47**(19), 10010–10026.
5. **Christian H. Holland**, B Szalai, and J Saez-Rodriguez (June 2020). Transfer of regulatory knowledge from human to mouse for functional genomics analysis. *Biochimica et Biophysica Acta (BBA) - Gene Regulatory Mechanisms* **1863**(6), 194431.
6. Garcia-Alonso, L, **Christian H. Holland**, MM Ibrahim, D Turei, and J Saez-Rodriguez (July 2019). Benchmark and integration of resources for the estimation of human transcription factor activities. *Genome Research* **29**(8), 1363–1375.