

Jonas Falck

WEB-DEVELOPMENT - DATA-ANALYSIS - BIOINFORMATICS

Holzstraße 1, 44869, Bochum, Germany

☎ (+31) 655707314 | ✉ jonas@falcken.de | 🏠 joe-nas.github.io | 📷 joe-nas

Skills

IT skills

- **operating systems:** linux 10+ years (Arch, Debian based), Windows, macOS
- **version control:** git
- **Productivity and Office:** Shell scripting, Regex, LaTeX, Markdown, Pandoc
- **container and virtualization:** docker, qemu, wsl

Web-Development

- **Languages:** Java, JavaScript, Python
- **Frameworks and Libraries:** Spring-Boot, JUnit, Mockito, React, Next.js, Django, Flask, Testcontainers
- **Databases:** SQL, MongoDB
- **Other web related skills:** REST, HTML, tailwindcss
- **Web servers:** nginx, shiny

Data science/Machine learning

- **Languages:** R/bioconductor, Python, Bash
- **Frameworks and libraries:** tidyverse, caret, biomaRt, grid, shiny, scikit-learn, pandas, numpy
- **visualization:** publication ready plots, development of custom visualizations using grid, ggplot2, seaborn, matplotlib, plotly, shiny
- **supervised:** linear regression, knn, decision trees, random forests
- **unsupervised:** HCA, PCA, kmeans
- **statistics:** parametric and non-parametric methods

Languages

- **English:** fluent
- **Dutch:** fluent (nt2)
- **German:** native

Experience

Identification and ranking of p63 binding sites putatively involved in the etiology of non-syndromic cleft lip with or without cleft palate

Nijmegen, Netherlands

Radboud University Medical Center Nijmegen RUNMC, Human Genetics

2015-2016

- In-silico prediction and in-vitro validation of clinically relevant transcription factor binding sites using an integrative multiomics approach.
- Took ownership of a wetwork research project, transforming it into bioinformatical research, teaching myself the necessary bioinformatic skills.
- Development of a pipeline to integrate publicly available and in-house multi-omics data (Chip-seq, SNP, GWAS, conservation, linkage disequilibrium), to generate reproducible results. haplotplotR: <http://tinyurl.com/4cjw7s5h>
- Effective communication and presentation of bioinformatical methods and results to researches with no bioinformatical expertise.

CTCF-motif directionality controls CTCF-mediated chromatin interactions and correlates with topological domain structure

Nijmegen, Netherlands

Center for Molecular and Biomolecular Informatics CMBI, Comparative Genomics

2016

- Drove and transformed an explorative research project into a hypothesis driven project resulting in a publication (see writing).
- Hypothesis generation by leveraging multi-omics datasets describing different dimensionalities of the genome, ranging 1D (sequence), 2D (ChIP-Seq), and 3D data (ChIA-PET, Hi-C).
- Hypothesis testing by applying parametric and non-parametric methods, randomization, as well as modeling of chromatin loops.
- Applying unsupervised machine learning techniques e.g. PCA, HCA as well as a multitude of visualizations for data exploration.

Logistics employee

Beuningen, Netherlands

Quantore

2018 - 2022

- Using warehouse management software to analyze erroneous orders and to troubleshoot and provide technical support to co-workers.
- Solving problems independently or to communicate issues with the superiors.
- Ensuring customer satisfaction by quality controlling orders.

Software

Iron Delirium™ - The Workout Tracker that no one asked for

Backend@github, Frontend@github

JONAS FALCK

- My current toy project Iron Delirium™ is a workout tracker that allows users to track their workouts and progress over time. Users can create an account, log in using google and github oauth to log their workouts. Workouts can be edited and deleted, and users can view their workout history. Iron Delirium™ is built around a REST API which is implemented using Spring-Boot/Security in the backend and Next.js/next-auth in the frontend. The Data is stored in a MongoDB database.

haploplotR: Visualizing linkage disequilibrium from 1000 genomes data

haploplotR@github

JONAS FALCK

- HaploplotR is a project that provides a tool for visualizing linkage disequilibrium patterns in human populations using data from the 1000 Genomes Project. HaploplotR uses haplotype data from the 1000 Genomes Project to generate LD plots, which show patterns of correlation between alleles at different loci across the genome. These plots can help researchers to identify regions of the genome that are associated with particular traits or diseases.

Writing

CTCF-mediated chromatin loops enclose inducible gene regulatory domains

BMC Genomics

MARTIN OTI, JONAS FALCK, MARTIJN A. HUYNEN & HUIQING ZHOU

March 2016, BMC Genomics; 17:252

- Available here: <https://doi.org/f8vngs>

CTCF-motif directionality controls CTCT-mediated chromatin interactions and correlates with topological domain structure

Master Internship

COMPARATIVE GENOMICS, CENTER FOR MOLECULAR AND BIOMOLECULAR INFORMATICS NIJMEGEN

2016

- Available here: <https://tinyurl.com/2p9hekax>

Identification, ranking and testing of p63 binding sites putatively involved in the etiology of non-syndromic cleft lip with or without cleft palate

Master Internship

HUMAN GENETICS, UNIVERSITY MEDICAL CENTER NIJMEGEN

2016

- Available here: <https://tinyurl.com/259vt5zk>

Education

Radboud University

Nijmegen, Netherlands

M.S. IN MEDICAL BIOLOGY

2015 - dropout

Radboud University

Nijmegen, Netherlands

B.S. IN MEDICAL BIOLOGY

2012 - 2015

Certificates & Trainings

- 2014 **Machine Learning**, Stanford University, Online
- 2022 **Intro to Machine Learning**, Kaggle.com, Machine-Learning Community
- 2022 **Pandas**, Kaggle.com, Machine-Learning Community
- 2022 **Feature Engineering**, Kaggle.com, Machine-Learning Community
- 2022 **Data Visualization**, Kaggle.com, Machine-Learning Community
- 2013 **Computing for Data Analysis**, John Hopkins University, Online
- 2023 **Nextflow and nf-core community training**, Seqera.io, Online
- 2023 **The Complete JavaScript Course 2023: From Zero to Expert!**, Udemy, Online
- 2023 **Node.js, Express, MongoDB & More**, Udemy, Online
- 2023 **Testing Spring Boot App with JUnit, Mockito & Testcontainers**, Udemy, Online
- 2023 **Master Spring Boot 3 & Spring Framework 6 with Java**, Udemy, Online
- 2023 **Java 17 Masterclass: Start Coding in 2023**, Udemy, Online