

Sina Rüeger

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Areas of experience

Genome-wide association studies (GWASs)	Creating GWAS pipelines, quality control procedures, GWAS for unconventional end-points (time-to-event data, proxy cases), rare variant association analysis, summary statistics follow-up methods (colocalization, fine-mapping, causal inference, heritability estimation).
Statistical modelling	Regression modelling techniques, model selection, data dimension reduction, classification, unsupervised clustering.
Data visualisation	Visual representation of concepts and results.
Reproducibility	Version control, workflow automation, documentation with knitr/Rmarkdown and programming best practices.
Domain knowledge	Genomics, Parkinson's disease, bariatric surgery, hepatitis C, tuberculosis & other infections, solid organ transplantation, multiple sclerosis, human height, critical care patients.
Data sets	Genomic data, GWAS summary statistics, brain imaging data, clinical data, questionnaire data, drugbank data.

Employment

Sep-2019 – present	Data Analyst / Bioinformatician , FinnGen , <i>Institute for Molecular Medicine Finland (FIMM)</i> , University of Helsinki, Helsinki, Finland. Extending PheWAS with novel statistical genetics methods.
Sep-2018 – Aug-2019	Postdoctoral Researcher , Fellay Lab , <i>Global Health Institute</i> , EPFL, Lausanne, Switzerland. Analysis of human and pathogen genomes for different infections.
Feb-2013 – Sep-2013	Internship , Statistical Genetics Group , <i>Department of Medical Genetics</i> , University of Lausanne, Lausanne, Switzerland. Rare genetic variant analysis.
Feb-2012 – Mar-2013	Biostatistician , Division of Biostatistics , <i>ISPMZ (now EBPI)</i> , University of Zurich, Zurich, Switzerland. Statistical consulting.
Mar-2009 – Jan-2012	Research Assistant , Institute of Data Analysis and Process Design , <i>Zurich University of Applied Sciences</i> , Winterthur, Switzerland. Statistical modelling for a mix of industry projects.

Education

Jul-2020	Tidyverse Instructor Certification , <i>RStudio</i> .
Oct-2013 – Sep 2018	PhD in Life Sciences , <i>University of Lausanne</i> , Lausanne, Switzerland, supervised by Prof. Zoltán Kutalik, Statistical Genetics Group , <i>Institute of Social and Preventive Medicine</i> , Lausanne University Hospital (CHUV). Topic: Integrative statistical analysis of -omics and genome-wide association studies data.
Feb-2009 – Jun-2011	Master of Science in Engineering with Specialisation in Information and Communication Technologies , <i>Zurich University of Applied Sciences</i> , Winterthur, Switzerland.
Oct-2005 – Oct-2008	Bachelor in Engineering, Degree Program in Data Analysis and Process Design , <i>Zurich University of Applied Sciences</i> , Winterthur, Switzerland.

Computing skills

- Statistical programming **R** [highly proficient], **Python** [familiar], **Matlab** [familiar], **Java** [familiar], **SQL** [familiar]
- Genomics tools **Plink**, **QCTOOL**, **GTCA**, ...
- Developer tools **Unix/Linux**, **git**, **GNU make**
- R Daily used for statistical computing and data visualisation; familiar with the architecture of R, package development and best practices.
- Computing experience Experience using cloud computing / high performance clusters for analysis and storage of large datasets.

Other activities

- SatRday Neuchatel 2020 Co-organiser of [SatRday Neuchatel](#) in 2020, a one day conference for R users.
- R-Ladies community Founding member and former co-organiser of [R-Ladies](#) Lausanne, a bi-monthly R user group. Former community manager of R-Ladies Slack.

Languages

German [native speaker], **English** [fluent, C1], **French** [good command, B1], **Finnish** [beginner]

Awards

- Apr-2017 *The 'Human Heredity' Best Student Platform Presentation Award* at the European Mathematical Genetics Meeting in Tartu, Estonia.
- Mar-2017 *Poster prize* at the ePerMed Workshop about 'Functional annotation of genome-wide variants' in Lausanne, Switzerland.
- May-2016 *Lodewijk Sandkuijl Award* for an outstanding talk in the field of complex genetics and statistical genetics at the European Society of Human Genetics Conference, Barcelona, Spain.

Main publications

Sina Rüeger, Aaron McDaid, and Zoltán Kutalik. [Evaluation and application of summary statistic imputation to discover new height-associated loci](#). *PLOS Genetics*, 14(5):1–32, 05 2018a

Sina Rüeger, Aaron McDaid, and Zoltán Kutalik. [Improved imputation of summary statistics for realistic settings](#). *bioRxiv*, page 203927, 2018b

Sina Rüeger et al. [Impact of common risk factors of fibrosis progression in chronic hepatitis C](#). *Gut*, 64(10):1605–1615, 2015