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Sina Rüeger

Areas of experience

Genome-wide association studies (GWASs)	Creating and executing GWAS pipelines, quality control procedures, GWAS for time-to-event data, rare variant association analysis, population stratification adjustments, summary statistic imputation, multiple testing correction techniques, summary statistics follow-up methods (fine-mapping, causal inference, heritability estimation).
Statistical modelling	Regression modelling techniques, analysis of variance, model & variable selection, data dimension reduction, classification, unsupervised clustering.
Data visualisation	Visual representation of concepts and results.
Data pre-processing	Data storage & documentation, quality control, missing data handling.
Trackability of work	Version control, 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 (selection)	Genomic data, brain imaging data, clinical data, questionnaire data, drugbank data.

Education

Oct-2013 – Sep 2018	**PhD in Life Sciences**, *University of Lausanne*, Lausanne, Switzerland, supervised by Prof. Zoltán Kutalik, Statistical Genetics Group, Institute of Social and Preventive Medicine, 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**, *Zurich University of Applied Sciences*, Winterthur, Switzerland.
Oct-2005 – Oct-2008	**Bachelor in Engineering, Degree Program in Data Analysis and Process Design**, *Zurich University of Applied Sciences*, Winterthur, Switzerland.

Employment

Sep-2018 – present	**Postdoctoral Researcher**, *Fellay Lab, Global Health Institute*, EPFL, Lausanne, Switzerland.
Feb-2013 – Sep-2013	**Internship**, *Statistical Genetics Group, Department of Medical Genetics*, University of Lausanne, Lausanne, Switzerland.
Feb-2012 – Mar–2013	**Biostatistician**, *Division of Biostatistics, ISPMZ (now EBPI)*, University of Zurich, Zurich, Switzerland.
Jan-2012 – Aug-2012	**Biostatistician**, *Center of clinical nursing science*, University Hospital Zurich, Zurich, Switzerland.
Mar-2009 – Jan-2012	**Research Assistant**, *Institute of Data Analysis and Process Design, Zurich University of Applied Sciences*, Winterthur, Switzerland.
Jul-2007 – Sep-2007	**Internship**, *Official Statistics Zurich*, Zurich, Switzerland.

Computing skills

Statistics/Programming	**R** [highly proficient], **Matlab** [familiar], **Java** [familiar], **SQL** [familiar], **GNU make** [familiar]
Genomics tools	**Plink**, **QCTOOL**, **GTCA**, ...
IT tools	**Unix/Linux**, **git**, **GNU make** [familiar], **LaTex**, **Emacs**, **Adobe Illustrator**
R	Daily used for statistical computing and data visualisation; familiar with the architecture of R, package development and best practices.
Computing experience	More than six years of experience using high performance clusters for analysis and storage of large files.

Other activities

R-Ladies community	Founding member and co-organiser of R-Ladies Lausanne, a bi-monthly R user group. R-Ladies is a world-wide organisation to promote gender diversity in the R community.

Languages

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

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