SaskiaHiltemann

Post-Doctoral Researcher, Bioinformatics & Education

About

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ORCID:
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Languages
Bilingual Dutch/English
German & French

Skills
Python, C, C++, UNIX,
Galaxy, Docker, Jekyll,
LaTeX

Interests

Bioinformatics, Education & Training, Open Science, FAIR principles, Community Building, Genome Sequencing, Data Analysis, Workflows, Automation, Visualisation, Best Practices, Cancer Research, Microbiome Analysis, Infosec, CTF, Traveling, Hiking, Reading, Puzzles.

Education

Since 2021	**Post-doctoral Researcher**	Erasmus Medical Center
	Focus on Microbiology Research, Federated Data Analysis, FAIR principles, Open Science, Software Development and Bioinformatics Education.	
2012-2020	**Ph.D. Researcher, Bioinformatician**	Erasmus Medical Center
	Focus on cancer analysis, metagenomics research. Galaxy tool and training development.	
2008–2010	**M.Sc.**	LIACS, University of Leiden & TU Delft
	Computer Science Specialization in Bioinformatics	
2005–2008	**B.Sc.**	LIACS, University of Leiden
	Computer Science	
2002–2005	**B.Sc. course work**	University of Leiden
	Physics & Astronomy	
2002	**High School (VWO)**	Alfrink College, Zoetermeer
	Specialization in Science & Technology	

Work Experience

Current — **Erasmus Medical Center, Rotterdam**
Post-doctoral Researcher & Bioinformatician
- *Training, Outreach & Dissemination*
- *Federated Data Analysis Infrastructure Development*
- *FAIR data analysis*
- *Education & Curriculum Development*
- *Antibiotic Resistance Detection*

2016-2021 — **Erasmus Medical Center, Rotterdam**
Ph.D. Candidate
- *Software Development and Pipeline building*
- *Training Development and Delivery*
- *Galaxy System's Administrator*
- *Microbiota Analysis and Antibiotic Resistance Detection*

2012-2016 — **Erasmus Medical Center, Rotterdam**
Junior Researcher & Bioinformatician
- *Software Development and Pipeline building*
- *Galaxy System's Administrator*
- *Prostate Cancer Analysis*

2010-2012	**After's Cool, The Hague**	Tutor of High School Students.
	Tutor of High School Students. *Math, Physics, Chemistry*	
2002-2010	**Self-Employed**	
	Tutor of High School Students. *Math, Physics, Chemistry*	

Projects

| 2020-2023 | **Gallantries Project, Coordinator** | ErasmusMC, Erasmus+ KA203 grant |
| | Contiuation of the Gallantries pilot project, development of bioinformatics curricula for higher education and training workshop. | |

| 2019-2023 | **CINECA project Training & Dissemination WP co-lead** | ErasmusMC, Horizon2020 grant |
| | CINECA (Common Infrastructure for National Cohorts in Europe, Canada, and Africa) aims at creating a global infrastructure for fedarated data analysis. I Co-lead the Training & Dissemination workpackage, and am also involved in the Healthcare Interoperability & Clinical Applications work package. | |

| 2019 | **Gallantries Pilot Project** | ErasmusMC, Mozilla mini-grant |
| | Lesson development combining Galaxy training with Carpentries-style R lessons. Scalable delivery of training via a series of hybrid-style workshops. | |

| 2018 | **Clinical Microbiota Analysis Pipeline** | ErasmusMC |
| | Development of a user-friendly analysis pipeline for 16S taxonomic profiling for use in daily clinical diagnostics of patients for Streeklab Haarlem. | |

| Since 2016 | **GTN: Galaxy Training Materials Infrastructure** | GalaxyProject |
| | Co-founder of the GTN infrastructure for the collaborative development of Galaxy training materials. Community building efforts to ensure utility for educators. Development of several tutorials on the topics of Metagenomics, Sequence Analysis, Galaxy Development and Visualisation. https://training.galaxyproject.org | |

| 2016 | **Galaxy CTF** | Galaxy Community Conference 2016 |
| | Together with Helena Rasche, built a framework and 28 challenges for a "Capture the Flag" event based on Galaxy. Tasks included exploiting recently patched security bugs within Galaxy, Docker security issues, exploring new Galaxy features, and exploiting common bugs in Galaxy tools. Approximately 16 people participated in the competition. The infrastructure for the competition was released afterwards to allow others to re-use it for educational purposes. | |

| Since 2016 | **Galaxy Interactive Environment Development** | GalaxyProject |
| | Created Galaxy Interactive Environments (GIEs) for several applications, including Phinch for metagenomic data visualisation and Ethercalc. | |

| 2012-2015 | **Prostate Cancer Analysis** | ErasmusMC |
| | Development of analysis tools and workflows for variant analysis in cancer, including fusion gene detection and impact analysis, and identification of somatic variants without normal samples. | |

| Since 2012 | **Galaxy Tool Development** | GalaxyProject |
| | I have integrated over 100 tools into the Galaxy Tool shed, including Complete Genomics Tools, Mothur for 16S rRNA sequence Analysis, Circos for visualisation, and more. Member of Galaxy's IUC team of tool developers that develop and ensure adherance to best-practices and FAIR principles. | |

Publications

Fostering accessible online education using Galaxy as an e-learning platform
  Saskia Hiltemann, Beatriz Serrano-Solano, Patricia M. Palagi, Melanie C. Föll, Cristóbal
  Gallardo-Alba, Anika Erxleben, Helena Rasche, Saskia Hiltemann, Matthias Fahrner,
  Mark J. Dunning, Marcel H. Schulz, Beáta Scholtz, Dave Clements, Anton Nekrutenko,
  Bérénice Batut, and Björn A. Grüning
  PLOS Computational Biology (2021). 2021

ASaiM-MT: a validated and optimized ASaiM workflow for metatranscriptomics analysis
  within Galaxy framework
  Subina Mehta, Marie Crane, Emma Leith, Bérénice Batut, Saskia Hiltemann, Magnus
  Ø Arntzen, Benoit J. Kunath, Phillip B. Pope, Francesco Delogu, Ray Sajulga, Praveen
  Kumar, James E. Johnson, Timothy J. Griffin, and Pratik D. Jagtap
  10 (Apr. 2021) p. 103. F1000 Research Ltd, 2021

Comparison of Illumina versus Nanopore 16S rRNA Gene Sequencing of the Human Nasal
  Microbiota
  Astrid P. Heikema, Deborah Horst-Kreft, Stefan A. Boers, Rick Jansen, Saskia D. Hilte-
  mann, Willem de Koning, Robert Kraaij, Maria A. J. de Ridder, Chantal B. van Houten,
  Louis J. Bont, Andrew P. Stubbs, and John P. Hays
  11.9 (Sept. 2020) p. 1105. MDPI AG, 2020

NanoGalaxy: Nanopore long-read sequencing data analysis in Galaxy
  Saskia Hiltemann, Willem de Koning, Milad Miladi, Saskia Hiltemann, Astrid Heikema,
  John P Hays, Stephan Flemming, Marius van den Beek, Dana A Mustafa, Rolf Backofen,
  Björn Grüning, and Andrew P Stubbs
  GigaScience (2020). 2020

Galactic Circos: User-friendly Circos plots within the Galaxy platform
  Saskia Hiltemann, Helena Rasche, and Saskia Hiltemann
  GigaScience (2020). 2020

Development and evaluation of a culture-free microbiota profiling platform (MYcrobiota) for
  clinical diagnostics
  Stefan A. Boers, Saskia D. Hiltemann, Andrew P. Stubbs, Ruud Jansen, and John P. Hays
  37.6 (Mar. 2018) pp. 1081–1089. Springer Science and Business Media LLC, 2018

Galaxy mothur Toolset (GmT): a user-friendly application for 16S rRNA gene sequencing
  analysis using mothur
  Saskia D Hiltemann, Stefan A Boers, Peter J van der Spek, Ruud Jansen, John P Hays,
  and Andrew P Stubbs
  GigaScience (Dec. 2018). Oxford University Press (OUP), 2018

Community-driven data analysis training for biology
  Bérénice Batut, Saskia Hiltemann, Andrea Bagnacani, Dannon Baker, Vivek Bhardwaj,
  Clemens Blank, Anthony Bretaudeau, Loraine Guéguen, Martin Čech, John Chilton, Dave
  Clements, Olivia Doppelt-Azeroual, Anika Erxleben, Mallory Freeberg, Simon Gladman,
  Youri Hoogstrate, Hans-Rudolf Hotz, Torsten Houwaart, Pratik Jagtap, Delphine Lariv-
  iere, Gildas Le Corguillé, Thomas Manke, Fabien Mareuil, Fidel Ramírez, Devon Ryan,
  Florian Sigloch, Nicola Soranzo, Joachim Wolff, Pavankumar Videm, Markus Wolfien,
  Aisanjiang Wubuli, Dilmurat Yusuf, Rolf Backofen, James Taylor, Anton Nekrutenko, and
  Björn Grüning
  (Nov. 2017). Cold Spring Harbor Laboratory, 2017

Systematically linking tranSMART, Galaxy and EGA for reusing human translational re-
  search data [version 1; referees: 2 approved]

Saskia Hiltemann, Chao Zhang, Jochem Bijlard, Christine Staiger, Serena Scollen, David van Enckevort, Youri Hoogstrate, Alexander Senf, Saskia Hiltemann, Susanna Repo, Wibo Pipping, Mariska Bierkens, Stefan Payralbe, Bas Stringer, Jaap Heringa, Andrew Stubbs, Luiz Olavo Bonino Da Silva Santos, Jeroen Belien, Ward Weistra, Rita Azevedo, Kees van Bochove, Gerrit Meijer, Jan-Willem Boiten, Jordi Rambla, Remond Fijneman, J. Dylan Spalding, and Sanne Abeln
(2017). 2017

Integration of EGA secure data access into Galaxy [version 1; referees: 2 approved]
Y Hoogstrate, C Zhang, A Senf, J Bijlard, S Hiltemann, D van Enckevort, S Repo, J Heringa, G Jenster, R J.A. Fijneman, JW Boiten, G A. Meijer, A Stubbs, J Rambla, D Spalding, and S Abeln
F1000Research 5.2841 (2016). 2016

Integration of EGA secure data access into Galaxy
Youri Hoogstrate, Chao Zhang, Alexander Senf, Jochem Bijlard, Saskia Hiltemann, David van Enckevort, Susanna Repo, Jaap Heringa, Guido Jenster, Remond J.A. Fijneman, Jan-Willem Boiten, Gerrit A. Meijer, Andrew Stubbs, Jordi Rambla, Dylan Spalding, and Sanne Abeln
F1000Research 5 (Dec. 2016) p. 2841. F1000 Research, Ltd., 2016

Next-generation sequencing reveals novel rare fusion events with functional implication in prostate cancer
I Teles Alves, Thomas Hartjes, Elizabeth McClellan, Saskia Hiltemann, René Böttcher, Natasja Dits, MR Temanni, Bart Janssen, W Van Workum, Peter van der Spek, et al.
Oncogene 34.5 (2015) pp. 568–577. Nature Publishing Group, 2015

Discriminating somatic and germline mutations in tumor DNA samples without matching normals
Saskia Hiltemann, Guido Jenster, Jan Trapman, Peter van der Spek, and Andrew Stubbs
Genome research 25.9 (2015) pp. 1382–1390. Cold Spring Harbor Lab, 2015

FuMa: reporting overlap in RNA-seq detected fusion genes
Youri Hoogstrate, René Böttcher, Saskia Hiltemann, Peter J van der Spek, Guido Jenster, and Andrew P Stubbs
Bioinformatics (2015) btv721. Oxford Univ Press, 2015

iReport: a generalised Galaxy solution for integrated experimental reporting.
Saskia Hiltemann, Youri Hoogstrate, Peter van v. der Spek, Guido Jenster, and Andrew Stubbs
GigaScience 3 (2014). 2014

CGtag: complete genomics toolkit and annotation in a cloud-based Galaxy
Saskia Hiltemann, Hailiang Mei, Mattias de Hollander, Ivo Palli, Peter van der Spek, Guido Jenster, and Andrew Stubbs
GigaScience 3.1 (2014) p. 1. BioMed Central, 2014

ImmunoGlobulin galaxy (IGGalaxy) for simple determination and quantitation of immunoglobulin heavy chain rearrangements from NGS
Michael J Moorhouse, David van Zessen, Hanna IJspeert, Saskia Hiltemann, Sebastian Horsman, Peter J van der Spek, Mirjam van der Burg, and Andrew P Stubbs
BMC immunology 15.1 (2014) p. 59. BioMed Central, 2014

Gene fusions by chromothripsis of chromosome 5q in the VCaP prostate cancer cell line
Inês Teles Alves, Saskia Hiltemann, Thomas Hartjes, Peter van der Spek, Andrew Stubbs, Jan Trapman, and Guido Jenster
Human genetics 132.6 (2013) pp. 709–713. Springer, 2013

iFUSE: integrated fusion gene explorer
Saskia Hiltemann, Elizabeth A McClellan, Jos van Nijnatten, Sebastiaan Horsman, Ivo Palli, Ines Teles Alves, Thomas Hartjes, Jan Trapman, Peter van der Spek, Guido Jenster, et al.

Bioinformatics *(2013) btt252. Oxford Univ Press, 2013*

Huvariome: a web server resource of whole genome next-generation sequencing allelic frequencies to aid in pathological candidate gene selection
Andrew Stubbs, Elizabeth A McClellan, Sebastiaan Horsman, Saskia D Hiltemann, Ivo Palli, Stephan Nouwens, Anton HJ Koning, Frits Hoogland, Joke Reumers, Daphne Heijsman, et al.
Journal of clinical bioinformatics *2.1 (2012) p. 19. BioMed Central, 2012*

Multi-coloured Cellular Automata
Saskia Hiltemann
Bachelor thesis, Erasmus Universiteit, Rotterdam, Netherlands *(2008). 2008*