Thies Gehrmann PhD Curriculum Vitæ

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Personal profile

Currently, I am a Postdoc in the department of Molecular Epidemiology at the Leiden University Medical Centre, working on translational research of healthy ageing. Bioinformatics is a constantly developing field, with continuously evolving measurements that presents a splendid opportunity to develop and apply novel methods. It also requires the practitioner to develop multidisciplinary skills from the statistical, computational and biological domains. I am excited to be part of this field, where my knowledge and competences are constantly challenged, humbled and developed.

Employment

Jan 2018 - Present
Postdoc at Department of Molecular Epidemiology, Leiden University Medical Centre
Bioinformatician on healthy ageing, together with Max Plank Institute of Biological Ageing.

Nov. 2016 - 2017
Postdoc at KNAW/Westerdijk Institute of Fungal Biodiversity
Embedded bioinformatician.

Nov. 2012 - 2016
PhD Candidate
Conducted research and performed teaching.

Education

2012-2018
Pattern Recognition and Bioinformatics group, TU Delft, The Netherlands
PhD in Bioinformatics.
Bioinformatic Analysis of Genetic and Transcriptomic Variation in Fungi.

2010-2012
Leiden University, Leiden, The Netherlands (In cooperation with TU Delft)
MSc Computer Science Track Bioinformatics.
Thesis on protein function prediction using Conditional Random Fields.

2008-2010
Heriot Watt University, Edinburgh, Scotland
BSc (Ord) Computer Science
Graduated with distinction.

Skills

Technical Skills
Python, Scala, C/C++, Java, Shell, Matlab, R
Experience with schedulers (SLURM, PDB) and version control software, (SVN, Git).
SQL, XML (and related technologies), LaTeX.
Pipeline development and management (Snakemake, Anaconda, Jupyter Notebook).
Experienced with Unix environments (primarily Linux).
Machine learning, comparative genomics, RNA-Seq analysis and algorithm development.

Languages
Fluent in Norwegian, German and English.
High level Dutch. Beginners French.

Referees

Upon request | Contact Thies for referee contact details.

Teaching

MSc Courses

Functional Genomics and Systems Biology
Lecturer and teaching assistant. Fall 2014, 2015, and 2016 at TU Delft

Computational Molecular Biology
Teaching assistant. Spring 2012 at Leiden University

BSc Courses

Life Science and Technology Bioinformatics
Teaching assistant. Spring 2016 at TU Delft.

Genome Scale Data Analysis
Lecturer and teaching assistant. Fall 2014 at TU Delft

External Courses

Quantitative biology summer school
Lectured on computational aspects of synteny and alternative splicing in fungi. Summer 2015 at Utrecht University.

Student Supervision

Jet Beekwilder | B.sc Student 2017-2018
Comparison of DNA extraction methods from fungi for Nanopore sequencing.

André Vollering | M.Sc Student 2014-2015
Heterosis: Finding Associated Genomic Regions.

Valerie Pourquie | B.Sc Student 2015
Conservation of polarization proteins in yeast and fungi.

Dimitris Palachanis | M.Sc Student 2013-2014
Using the Multiple Instance Learning framework to address differential regulation.

Other activities/skills/information

Awards | ECCB 2016 Student Symposium 'Best Oral Presentation' award.
TU Delft Graduate School 'Best poster presentation' award 2013.
Scott Logic Computer Science Prize 2010.

Reviewing | Nucleic Acid Research (2016)

Volunteering | International Student Network (Leiden) 2013-2016. Stage construction and management.
Dutch Red Cross (Den Haag) 2014-2015. First Aid (EHBO) at events and refugee centers.

Publications

Journal publications

[1] Thies Gehrmann, Jordi F. Pelkmans, Robin A. Ohm, Aurin M. Vos, Anton S.M. Sonnenberg, Johan J.P. Baars, Han A.B. Wösten, Marcel J.T. Reinders, and Thomas Abeel. Nucleus-specific expression in the multinuclear mushroom-forming fungus Agaricus bisporus reveals different nuclear regulatory programs. *Proceedings of the National Academy of Sciences of the United States of America*, 2018

[2] Abigail L. Manson, Thomas Abeel, James E. Galagan, Jagadish Chandrabose Sundaramurthi, Alex Salazar, Thies Gehrmann, Siva Kumar Shanmugam, Kannan Palaniyandi, Sujatha Narayanan, Soumya Swaminathan, et al. Mycobacterium tuberculosis whole genome sequences from southern india suggest novel resistance mechanisms and the need for region-specific diagnostics. *Clinical Infectious Diseases*, 2017

[3] Jordi F. Pelkmans, Mohini B. Patil, Thies Gehrmann, Marcel J.T. Reinders, Han A.B. Wösten, and Luis G. Lugones. Transcription factors of schizophyllum commune involved in mushroom formation and modulation of vegetative growth. *Scientific Reports*, 2017

[4] Thies Gehrmann, Jordi F. Pelkmans, Luis G. Lugones, Han A.B. Wösten, Thomas Abeel, and Marcel J.T. Reinders. Schizophyllum commune has an extensive and functional alternative splicing repertoire. *Scientific reports*, 2016

[5] Jordi F. Pelkmans, Aurin M. Vos, Karin Scholtmeijer, Ed Hendrix, Johan J.P. Baars, Thies Gehrmann, Marcel J.T. Reinders, Luis G. Lugones, and Han A.B. Wösten. The transcriptional regulator c2h2. *Applied microbiology and biotechnology*, 2016

[6] Thies Gehrmann and Marcel J.T. Reinders. Proteny: discovering and visualizing statistically significant syntenic clusters at the proteome level. *Bioinformatics*, 2015

Conference publications

[7] Thies Gehrmann, Marco Loog, Marcel J.T. Reinders, and Dick de Ridder. Conditional random fields for protein function prediction. In *International Conference on Pattern Recognition in Bioinformatics*, 2013

Under Review

[8] Thies Gehrmann, Jordi F. Pelkmans, Luis G. Lugones, Han A.B. Wösten, Thomas Abeel, and Marcel J.T. Reinders. Variants in RNA - Seq data show a continued mutation rate during strain preservation of Schizophyllum commune. *bioRxiv*, 2017 (*Under review in Scientific Reports.*)

[9] Eveline T. Diepeveen, Thies Gehrmann, Valerie Pourquie, Thomas Abeel, and Liedewij Laan. Patterns of conservation and diversification in the fungal polarization network. *bioRxiv*, 2017 (*Under review in Molecular Biology and Evolution*)

[10] Duong Vu, Michel de Vries 1, Thies Gehrmann, Benjamin Stielow, Ursula Eberhardt, Abdullah Al-Hatmi, Ewald Z. Groenewald, Marizeth Groenewald, Gianluigi Cardinali, Teun Boekhout, Pedro W. Crous, Vincent Robert, and Gerard J.M. Verkleij. Large-scale analysis of filamentous fungal DNA barcodes reveals thresholds for species and higher taxon delimitation. (*Under review in Studies in Mycology*)

[11] Vladimiro Guarnaccia, Thies Gehrmann, Duong Vu, Vincent Robert, Ewald Z. Groenewald, Pedro W. Crous. *Phyllosticta citricarpa* and sister species of global importance to Citrus. (*Under review in Molecular Plant Pathology*)

In Progress

[11] Lizel Mostert, Thies Gehrmann, Duong Vu, Vincent Robert. Genomic analysis of the Grape vine pathogen *Phaeoacremonium* in South African vineyards. (*In progress*)

[12] Annick Lang, Thies Gehrmann, Nils Cronberg. Extreme gender dimorphism and its impact on the genetic diversity of *Dicranum scoparium* mosses. (*In progress*)

[13] Differentiating the expression of a watermarked pathway duplication in an industrial fungus. (*In progress*)

[14] Conservation of the regulation of a core metabolic pathway across fungal species. (*In progress*)