Tom Haber

Post-doctoral Researcher

CONTACT

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SKILLS

Programming

C/C++
Python
Julia
R
Java

Languages

English
Dutch
French

INTERESTS

Problem solving
High-performance computing
Traveling
Climbing
(Computational) Statistics
Machine Learning

EDUCATION

2004 - 2015 **Ph.D. Computer Science** — Hasselt, Belgium
Hasselt University
Acquiring the World through Photographs
Advisor: Philippe Bekaert

2000 - 2004 **Licentiate of Applied Computer Sciences** — Hasselt, Belgium
Limburgs Universitair Centrum

RESEARCH EXPERIENCE

2019-2021 **Post-doctoral Researcher** — Leuven, Belgium
Hasselt University + imec
(privacy-preserving) Machine learning and AI with application in material-science (for semiconductor tool vendor) and single cell sequencing (FlandersAI).

2018-2019 **Post-doctoral Researcher** — Hasselt, Belgium
Hasselt University + imec
Continued development on bio-statistics software for bayesian mixed effect modeling in pharmacometrics (J&J OO project) and latent-class mixture models (EPAD project). Pitch for imec innovation project

2014-2018 **Post-doctoral Researcher** — Leuven, Belgium
Exascience life lab
Worked on scalable bio-statistics (bayesian inference, mixed effect models), machine learning, parallel computing and optimization.

2010-2014 **Researcher - Member of steering committee** — Leuven, Belgium
Exascience lab, Intel labs Europe
Worked on In-situ visualization algorithms for use on exascale computing platforms including multi-core resilient algorithms and reduction algorithms under load imbalance.

2008-2010 **Researcher** — Hasselt, Belgium
Hasselt University
Developed a real-time depth capture system for broadcasting using a camera-projector system. This resulted in a compact set-up that produces depth estimates and confidence values at 50Hz.

2007 - 2008 **Ph.D. Internship** — Saarbrücken, Germany
Max-Planck-Institut Informatik
Worked on project “Relighting Objects from Image Collections”

TEACHING

2004-present **Copromotor of two Ph.D. students**
Hasselt University

- Balazs Nemeth: Message Passing Computational Methods with Pharmacometrics Application
- Thomas Kovac: Heterogeneous computing in epidemiological modelling (undefended)

2019-present **Master Inf - Machine Learning and deep Learning (Lecturer)**
Hasselt University
Created own course with lectures, exercises and projects.

2006-2010 **Master Inf - Advanced Computer Graphics (Assistant)**
Hasselt University

2004-2020 **2e Bach Inf - Operating Systems (Assistant)**
Hasselt University

2004-present **Copromotor/superviser**
Hasselt University
Several bachelor and master thesis student.

RESEARCH INTERESTS

- Statistical modelling and computational science
- Combination of machine learning and statistical/physical modelling
- High-performance parallel algorithms
- Programming languages for high-performance computing

PUBLICATIONS

A selection of publications is presented on the next page. For a full list of publications, please check `https://www.researchgate.net/profile/Tom-Haber-2`.

Improving the Runtime Performance of Non-linear Mixed-Effects Model Estimation

Tom Haber and Frank Van Reeth

2020 European Conference on Parallel Processing

Automatic Parallelization of Probabilistic Models with Varying Load Imbalance

Balazs Nemeth, **Tom Haber**, Jori Liesenborgs and Wim Lamotte

2020 IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGRID)

Heterogeneous computing for epidemiological model fitting and simulation

Thomas Kovac, **Tom Haber**, Frank Van Reeth and Niel Hens

2018 BMC Bioinformatics

Relaxing Scalability Limits with Speculative Parallelism in Sequential Monte Carlo

Balazs Nemeth, **Tom Haber**, Jori Liesenborgs and Wim Lamotte

2018 IEEE International Conference on Cluster Computing (CLUSTER)

Fast derivatives of likelihood functionals for ODE based models using adjoint-state method

Valdemar Melicher, **Tom Haber** and Wim Vanroose

2017 Computational Statistics

Relighting objects from image collections

Tom Haber, Christian Fuchs, Philippe Bekaert, Hans-Peter Seidel, Michael Goesele and Hendrik P. A. Lensch

2009 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)