Tom Haber
Post-doctoral Researcher

CONTACT

✉ tom.haber@uhasselt.be
☎ +32498579069
📍 Linkhoutstraat 227
3560 Lummen
Belgium
○ tomhaber
R^G Tom-Haber-2
🆔 0000-0003-3940-3811

SKILLS

Programming

C/C++ ●●●●●
Python ●●●●●
Julia ●●●●●
R ●●●●○
Java ●●●○○

Languages

English ●●●●●
Dutch ●●●●●
French ●●●○○

INTERESTS

Problem solving

High-performance computing

Programming

Simulation

(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

2022-present	**R&D Researcher -**	📍 **Leuven, Belgium**

imec
Building the future of HPC and AI systems at imec. Looking at the full-stack solution from System Architecture, run-time, CPU, accelerator and interconnect solutions up to software and applications. Technical co-leader for architectural modelling/simulation

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
- System/physical/biological simulation
- Combination of machine learning and statistical/physical/biological 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)