Oliver Hamelijnck
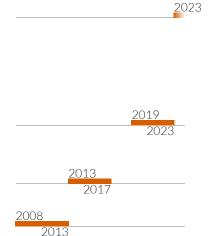
Postdoctoral Researcher | ohamelijnck.github.io
oliver.hamelijnck@warwick.ac.uk | +447881221497 | ohamelijnck@gmail.com

CURRENT

2023

POSTDOCTORAL RESEARCHER University of Warwick

My research explores Machine Learning methods, such as Gaussian processes, to advance spatio-temporal models for real world phenomenon with interests in multi-task, multi-fidelity and physics-informed methods.

EDUCATION

2019
2023

PHD, COMPUTER SCIENCE Alan Turing Institute

University of Warwick & Alan Turing Institute Doctoral Student 2019
Scalable Bayesian Inference for Spatio-Temporal Gaussian Processes

2013
2017

MENG, COMPUTER SCIENCE University of Warwick

Graduated with First Class Honours degree

2008
2013

A LEVELS + GCSES

A levels: A*AA in Maths, Chemistry, Physics -- GCSEs: 4 A*s, 5As, 1B

LINKS

Github:// **defaultobject**
G-Scholar:// **CZTISTEAAAAJ**
Website:// **ohamelijnck.github.io**

PROGRAMMING

Python
Jax
PostgreSQL
Tensorflow
Java
C/C++

PUBLICATIONS

PHYSICS-INFORMED VARIATIONAL STATE-SPACE GAUSSIAN PROCESSES

To appear at the Thirty-Eighth Conference on Neural Information Processing Systems, NeurIPs 2024
O. Hamelijnck; A. Solin; T. Damoulas;
#2 Publication venue in Artificial Intelligence (*H index, Google Scholar*)

SPATIO-TEMPORAL VARIATIONAL GAUSSIAN PROCESSES

Thirty-Fifth Conference on Neural Information Processing Systems, Neurips 2021
O. Hamelijnck*; W.J. Wilkinson*; N.A. Loppi; A. Solin; T. Damoulas;. *= *Joint first authors*
#2 Publication venue in Artificial Intelligence (*H index, Google Scholar*)

TRANSFORMING GAUSSIAN PROCESSES WITH NORMALISING FLOWS

Proceedings of The 24th International Conference on Artificial Intelligence and Statistics, AISTATs 2021
J. Maronãs*; O. Hamelijnck*; T. Damoulas; M. Steel. *= *Joint first authors*
#16 Publication venue in Artificial Intelligence (*H index, Google Scholar*)

NON-STATIONARY NON-SEPARABLE GAUSSIAN PROCESSES

International Conference on Machine Learning, ICML 2020
K. Wang; O. Hamelijnck; T. Damoulas; M. Steel
#3 Publication venue in Artificial Intelligence (*H index, Google Scholar*)

MULTI-RESOLUTION MULTI-TASK GAUSSIAN PROCESSES Thirty-Third Conference on Neural Information Processing Systems, Neurips 2019

O. Hamelijnck; K. Wang; T. Damoulas; M. Girolami
#2 Publication venue in Artificial Intelligence (*H index, Google Scholar*)

WORK EXPERIENCE

AMAZON | Research Scientist Intern
March - August 2021 | Virtual

- Developed and implemented optimisation models to handle uncertainty from demand forecasts
- Close collaboration with business team to bring optimisation models into production

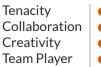## ALAN TURING INSTITUTE | Research Assistant
2017-2019 | London, UK

- Brought in to research and develop machine learning models to forecast air pollution across London
- Developed multiple state-of-the art Gaussian Process models resulting in publications in top tier conferences

MODALITY SYSTEMS | Software Engineer, Intern
Summers 2014-2016 | Norwich, UK

- Explored and assessed the commercial benefit of a beta released library (using AngularJS)
- Extended an automated test suite to support new products

SKILLS

Tenacity
Collaboration
Creativity
Team Player

HOBBIES

Climbing/Bouldering
Bread Making
Playing Guitar

PROJECTS

SDEM
Run experiments locally and on clusters with docker and singularity.

BATCHJAX
Extend JAX vmap to lists and Objax ModuleLists.

Simple GPT
A GPT and Transformer implemented in JAX.

FELLOWSHIPS AND AWARDS

ALAN TURING INSTITUTE DOCTORAL FELLOWSHIP | 2019 - 2023
Award covers tuition fees, travel funds and stipend

NEURIPS TRAVEL AWARD | 2019

DEPARTMENTAL COURSEWORK PRIZE | 2013
Coursework ranked in top 5 out of 150

INVITED PRESENTATIONS

METHODS OF MACHINE LEARNING Spatio-temporal Variational Gaussian Processes | July 2023
Tübingen University, Germany

GAUSSIAN PROCESS SUMMER SCHOOL Spatio-temporal Variational Gaussian Processes | September 2023
Manchester University, UK

AMAZON - ATS RESEARCH Transforming Gaussian Processes with Normalising Flows | March 2021
Virtual

MLNET - UNIVERSITY OF SHEFFIELD Multi-resolution multi-task Gaussian Processes - London air quality | July 2020
Virtual

LONDON BOROUGH DATA PARTNERSHIP Modelling Londons Air Quality | March 2018
City Hall, London, UK

DATA-CENTRIC ENGINEERING READING GROUP Sparse Gaussian Processes | July 2019
The Alan Turing Institute, London, UK