CV - Haakon Christopher Bakka

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Personal details

Personal email: haakon.c.bakka@gmail.com
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Norwegian address: , ,
Norwegian phone:
Born:
Languages: Norwegian (Native Language), English (Excellent)

Education and Employment

2017 - 2018 King Abdullah University of Science and Technology (KAUST)
PostDoc with Professor Håvard Rue. Working on spatial models, space-time models, extremes, models for road networks, and priors for size-parameters of model components.
2013 - 2017 Norwegian University of Science and Technology (NTNU)
Doctor of Philosophy (PhD) in Statistics. Supervisors Håvard Rue, Janine Illian and Daniel Simpson. Thesis title: "Modeling Spatial Dependencies using Barriers and Different Terrains".
2012 - 2013 Accenture
Analyst at Accenture in Oslo, working in IT Service Management.
2007 - 2012 Norwegian University of Science and Technology (NTNU)
Master of Science / Engineering degree in the Industrial Mathematics programme. Thesis title: "Applications of p-adic Numbers to well understood Quantum Mechanics: With a focus on Weyl Systems and the Harmonic Oscillator". My course load was 130% of the recommended course load. Average grade A (top grade). Student member of the board of education (Utdanningsutvalget) headed by the deputy rector Berit Kjeldstad. Recipient of the master award "Stubbanprisen".

Haakon as a Researcher

Haakon is focused on the entire value chain of research, from development to implementation to real applications, dissemination, maintenance and support. His goal is to do theoretical and methodological developments that have an impact for practical applications.

2013 - 2017 Accounting for physical barriers in spatial models
When modeling e.g. fish near the coast, classical models borrow strength across land, which is in conflict with reality. In this work, we create, implement, run case studies, and teach, a new spatial model that accounts for physical barriers and force correlation to "go around" the barrier.

2016 - 2017 Spatial modeling of terrain dependent second order structure

Computationally efficient knowledge-based non-stationary model. The study area is divided into regions according to a spatial factor variable, and each region is given a separate correlation range.

Future plans: Variance decomposition in hierarchical models
A Generalised Additive Model consists of several additive terms called model components. We will investigate the concept of size for these model components, and create weakly informative joint priors for all the size-parameters.

Haakon as an Instructor

Haakon is focused on being pedagogical, with the belief that students with a good teacher learn much faster than students without a teacher. Main tools include; structuring content in a way that students find clear, selecting topics according to student needs and interests, and the continuous improvement of his teaching skills.

2017, February, Saudi-Arabia: Lecturer and organiser. INLAcourse for the statistics department at Kaust.
2017, January, Canada: Lecturer. Space-time INLAcourse for Oceans and Fisheries Canada.
2016, October, Iceland: Lecturer and organiser. R-INLA course in Reykjavik.
2016, June, Spain: Lecturer. An introduction to INLA and SPDE in Valencia.
2016, May, Switzerland: Paid lecturer. Bayesian Statistics with R-INLA in Zurich. Part of a series of R courses.
2016, February, Spain: Lecturer and co-organiser. The Stochastic Partial Differential Equations approach course in Pamplona.
2014-2015, NTNU, Norway: Creating electronic learning material (including youtube videos) in statistics.
2013, Autumn, NTNU, Norway: Lecturer and co-organiser of Calculus 1. More than 300 engineering students.
2013, Autumn, NTNU, Norway: Calculus 1 course videos.
2010, Autumn, NTNU, Norway: Organiser and lecturer. Refresher course in mathematics for first year engineering students.
2010 - 2011, NTNU, Norway: Exam courses in Calculus 1, Calculus 2, Calculus 3, Calculus 4, and Physics 1. The videos from these 10-hour courses have been watched several thousand times in total.
2008 - 2011, NTNU, Norway: Teaching assistant in Calculus 1 [x2], Calculus 3, Calculus 4, and Mechanical physics, Physics Lab, Linear methods. Exercise lectures in Calculus 1 and calculus 2.

Future plans
Give courses in R-INLA, INLA methodology, Hierarchical Bayesian modeling, Priors, Gaussian random effects, Spatial modeling and/or Space-time modeling, upon request.

Haakon as a Research Disseminator in Public

2016, Autumn, Norway: Presenting on national television (NRK). On "Models for good science".
2015, Spring, Norway: Presenting on national television (NRK). On "Measuring the length of the coastline and fractals."
2014, Spring, Trondheim, Norway: 3 hour entertaining presentation on how it feels to be a mathematician at "Excenteraften på Samfundet". On "A journey into the world of mathematics and mathematicians".

Haakon as a Publishing and Grant-seeking Author

Paper in progress: "Accounting for physical barriers in species distribution modeling with non-stationary spatial random effects" - Haakon Bakka, Jarno Vanhatalo, Janine Illian, Daniel Simpson, Håvard Rue
Paper in progress: "Revisiting area risk classification of visceral leishmaniasis in Brazil" - Gustavo Machado, Haakon Bakka, Julio Alvarez, LE Donato, Ferreira de Lima, R Vieira, Victor Javier Del Rio Vilas

PhD thesis: "Modeling Spatial Dependencies using Barriers and Different Terrains"
Master thesis: "Applications of p-adic Numbers to well understood Quantum Mechanics: With a focus on Weyl Systems and the Harmonic Oscillator"

Grant accepted: Unifor, Norway, 2015. On "Log-Gaussian Cox Processes with spatially varying second order properties - applications in ecology".
Grant accepted: SECURE, UK, 2016. On "Efficiently modelling non-stationarity in ecological spatial models".

Haakon in Conferences and Talks

2017, July, University of Bergamo, Italy: Invited talk in conference TIES-GRASPA. In progress.
2016, October, Reykjavik, Iceland: Invited talk at the University of Iceland. On "Barriers for spatial correlation".
2016, August, Smogen, Sweden: Invited talk in workshop. On "Barriers for spatial correlation".
2015, Trondheim, Norway: Co-organiser of the conference "Læringsfestivalen" (The festival of learning). On pedagogy in science with a focus on technological opportunities. Around 400 participants.
2014, July, Gottingen, Germany: Contributed talk in conference IWSM. On "She'll be coming 'round the mountain: Simple models of complex spatial behaviour".
Participation with poster contribution: Sardinia 2016, Aalborg 2015, Linz 2015.