Michael Komodromos

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mkomod.github.io
mkomod

I'm a PhD student in Statistics and Machine Learning part of the Imperial-Oxford StatML CDT. My research is focused on developing novel methodology for prediction and variable selection on large scale high-dimensional datasets.

Education

Sep. 2020 - Jan. 2025 (expected completion)

PhD. Statistics and Machine Learning
Imperial College London
Research focus: scalable Bayesian high-dimensional regression, variational inference, variable selection. Supervised by Dr Sarah Filippi, Dr Marina Evangelou, Prof Eric Aboagye.
Recipient of Cancer Research UK scholarship.

Sep. 2019 - Sep. 2020

MSc. Statistics - Distinction
Imperial College London
Dissertation: Time series analysis of intensive care data. In partnership with Great Ormond Street Hospital, supervised by Prof Niall Adams
Key Modules: Big Data, Machine Learning, Computational Statistics, Applied Statistics, Data Science, Inference, Probability Theory, Non-parametric Statistics.

Sep. 2015 - Jul. 2018

BSc. Statistics, Economics and Finance - 1st
University College London

Experience

Apr. 2023 - Apr. 2023

Spring Internship, G-Research
Acquired foundational knowledge and practical insights in Quantitative Research.
Built and tested trading strategies using statistical models in Python.

Jan. 2023 - Apr. 2023

Research Scientist Internship, Optima Partners
Designed and implemented novel methodology for large scale genomic data.
Enhanced modelling capabilities by constructing joint models from the marginals, leading to insight which was previously unavailable.

Sep. 2020 - Jan. 2023

Graduate Teaching Assistant, Imperial College London
Developed comprehensive teaching resources for statistical programming.
Ran weekly student tutorial sessions and provided one-to-one support.

Technical skills

Programming	Python, R, C++, Scala (Spark).
GNU/Linux	vim, git, ssh, bash.

Publications

M. Komodromos, M. Evangelou, and S. Filippi, "Logistic variational Bayes revisited," in *Forty-first International Conference on Machine Learning (ICML)*, 2024.

M. Komodromos, M. Evangelou, and S. Filippi, "High-dimensional non-parametric additive models," In Preparation.

M. Komodromos, K. Ray, M. Evangelou, and S. Filippi, "Group spike-and-slab variational Bayes," 2023, Under review. [Online]. Available: `https://arxiv.org/abs/2309.10378`.

M. Komodromos, E. O. Aboagye, M. Evangelou, S. Filippi, and K. Ray, "Variational Bayes for high-dimensional proportional hazards models with applications within gene expression," *Bioinformatics*, 2022.

Talks and Public Outreach

"Applications of group sparse regression," G-Research Machine Learning Seminars, Nov. 2023.

"An introduction to variational inference," Junior Statistics Seminars, Imperial College London, Nov. 2023.

"Machine learning in cancer research," Great Exhbition Road Festival. Project organizer and lead, Jun. 2023.

"Group sparse variational bayes for high-dimensional glms," BayesConf poster session, Mar. 2023.

"Variational bayes for high-dimensional survival with sparse priors," CMStatistics, Dec. 2021.

"Non-conjugate variational inference," Amazon Research Berlin – StatML poster session, Apr. 2021.

"Bringing auto-diff to R packages," Jan. 2021. [Online]. Available: `https://user2021.r-project.org`.

Software

vi-per	Variational inference for Gaussian process logistic regression, implements methodology introduced in ICML paper Written in Python using pytroch and gpytroch, mkomod/vi-per
ssvb	Scalable Bayesian variable selection algorithm for high-dimensional survival data. Written in R and C++, available on CRAN. mkomod/survival.svb
gsvb	Group sparse variational Bayes for high-dimensional regression. Written in R and C++. mkomod/gsvb
chess	The game of chess written in C++. mkomod/chess

Additional Information

Citizenship	Dual UK and Cypriot, eligible to work in the UK and EU.
Extra curricular	Reading, photography, brewing, cycling.
Contact Information	mkomodromos0@gmail.com, mobile available upon request.

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