Bayesian learning: Challenges, limitations and pragmatics

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Bayesian Learning: Challenges, Limitations and Pragmatics

Proefschrift
ter verkrijging van
de graad van Doctor aan de Universiteit Leiden
op gezag van Rector Magnificus prof. mr. C.J.J.M. Stolker,
volgens besluit van het College voor Promoties
te verdedigen op dinsdag 26 januari 2021
klokke 16:15 uur

door

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geboren te Rotterdam in 1989

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The author's PhD position at the Mathematical Institute was supported by the Leiden IBM-SPSS Fund. The research was performed at the Centrum Wiskunde & Informatica (CWI). Part of the work was done while the author was visiting Inria Lille, partly funded by Leids Universiteits Fonds / Drs. J.R.D. Kuikenga Fonds voor Mathematici travel grant number W19204-1-35.

Cover design by Chantal Bekker
Printing by Drukkerij Haveka

Universiteit Leiden
Mathematisch Instituut

CWI
Centrum Wiskunde & Informatica

Origin of the material

This dissertation is based on the following papers. The author of this dissertation contributed substantially to each of these papers.

Chapter 2 is based on the paper that is under review as

> Tom Sterkenburg and Rianne de Heide. On the truth-convergence of open-minded Bayesianism.

Chapter 3 is accepted for publication in *Psychonomic Bulletin & Review*, and is available as the technical report

> Rianne de Heide and Peter Grünwald. Why optional stopping can be a problem for Bayesians. *arXiv 1708.08278*. August 2017.

Chapter 4 is published as

> Allard Hendriksen, Rianne de Heide and Peter Grünwald. Optional Stopping with Bayes Factors: a categorization and extension of folklore results, with an application to invariant situations. Bayesian Analysis, advance publication, 18 August 2020. doi:10.1214/20-BA1234.

Chapter 5 is based on the technical report

> Peter Grünwald, Rianne de Heide and Wouter Koolen. Safe Testing. *arXiv 1906.07801*. June 2019.

Chapter 6 is published as

> Rianne de Heide, Alisa Kirichenko, Nishant Mehta and Peter Grünwald. Safe-Bayesian Generalized Linear Regression. AISTATS 2020, PMLR 108:2623-2633.

The software for this chapter is partly available as

> Rianne de Heide (2016). SafeBayes: Generalized and Safe-Bayesian Ridge and Lasso Regression. R package version 1.1. https://cran.r-project.org/src/contrib/Archive/SafeBayes/

Chapter 7 is published as

> Xuedong Shang, Rianne de Heide, Emilie Kaufman, Pierre Ménard and Michal Valko. Fixed-Confidence Guarantees for Bayesian Best-Arm Identification. AISTATS 2020, PMLR 108:1823-1832.

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