

Willem van den Boom

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Education Duke University, Department of Statistical Science
Ph.D. in Statistical Science 2018
Certificate in College Teaching 2018
M.S. in Statistical Science 2016
Dissertation: Tailored Scalable Dimensionality Reduction
Advisors: David B. Dunson and Galen Reeves

Utrecht University, University College Roosevelt
B.Sc. in Liberal Arts and Sciences 2014
Major in Mathematics, Computer Science, and Physics
Minor in Methods & Statistics

Employment National University of Singapore, Yale-NUS College, Division of Science
Research Fellow 2020 – present
Lecturer 2019 – 2020
Research Fellow 2019

National University of Singapore, Department of Statistics and Applied Probability
Research Fellow 2018 – 2019

Publications:
Peer reviewed

1. van den Boom, W., Reeves, G., and Dunson, D.B. (accepted). Approximating posteriors with high-dimensional nuisance parameters via integrated rotated Gaussian approximation. *Biometrika*. Unrevised preprint available at arXiv:1909.06753
2. van den Boom, W., Hoy, M., Sankaran, J., Liu, M., Chahed, H., Feng, M., and See, K.C. (2020). The search for optimal oxygen saturation targets in critically ill patients: Observational data from large ICU databases. *CHEST*, 157(3), 566–573. doi:10.1016/j.chest.2019.09.015
3. van den Boom, W., Mao, C., Schroeder, R.A., and Dunson, D.B. (2018). Extrema-weighted feature extraction for functional data. *Bioinformatics*, 34(14), 2457–2464. doi:10.1093/bioinformatics/bty120

4. van den Boom, W., Schroeder, R.A., Manning, M.W., Setji, T.L., Fiestan, G., and Dunson, D.B. (2018). Effect of A1C and glucose on postoperative mortality in noncardiac and cardiac surgeries. *Diabetes Care*, 41(4), 782–788. doi:10.2337/dc17-2232
5. van den Boom, W., Dunson, D., and Reeves, G. (2015). Quantifying uncertainty in variable selection with arbitrary matrices. *IEEE 6th International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, 385–388. doi:10.1109/CAMSAP.2015.7383817

**Publications:
Preprint**

1. van den Boom, W., Tallarita, M., and De Iorio, M. (2020). Bayesian Joint Modelling of Recurrence and Survival: a Conditional Approach. arXiv:2005.06819
2. van den Boom, W., Reeves, G., and Dunson, D.B. (2015). Scalable approximations of marginal posteriors in variable selection. arXiv:1506.06629

**Honors &
Awards**

- Fulbright Grant. Fulbright Foreign Student Program, 2014.
- Graduated Summa Cum Laude. Utrecht University, University College Roosevelt, 2014.

**Conference
Presentations:
Oral**

1. EP-IS: Combining expectation propagation and importance sampling for Bayesian nonlinear inverse problems. *62nd ISI World Statistics Congress*, Kuala Lumpur, Malaysia, 2019.
2. Approximating high-dimensional posteriors with nuisance parameters via integrated rotated Gaussian approximation. *Bayesian Computation for High-Dimensional Statistical Models*, Institute of Mathematical Sciences, National University of Singapore, 2018.
3. Scalable posterior approximations of marginal posteriors in variable selection. *2017 Joint Statistical Meetings*, Baltimore, MD, United States, 2017.

**Conference
Presentations:
Poster**

1. EP-IS: Combining expectation propagation and importance sampling for Bayesian nonlinear inverse problems. *12th Conference on Bayesian Nonparametrics*, Oxford, United Kingdom, 2019.
2. Flexible Bayesian feature extraction from varying length functional data. *11th Conference on Bayesian Nonparametrics*, Paris, France, 2017.

3. Effect of A1c and glucose on postoperative mortality in non-cardiac versus cardiac surgeries. *American Diabetes Association's 77th Scientific Sessions*, San Diego, CA, United States, 2017.
4. Scalable posterior approximation. *Laboratory for Analytic Sciences Symposium*, Raleigh, NC, United States, 2016.
5. Scalable posterior approximation in variable selection. *IEEE 6th International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, Cancun, Mexico, 2015.
6. Scalable posterior approximation in variable selection. *Laboratory for Analytic Sciences Symposium*, Raleigh, NC, United States, 2015.

**Teaching
Experience**

National University of Singapore, Yale-NUS College
Instructor of Record. Introduction to Data Science 2019 – 2020
 Responsible for the design of this new course
Instructor of Record. Quantitative Reasoning 2019

Duke University
Instructor of Record. Data Analysis and Statistical Inference 2017
 Full credit course taught online
Teaching Assistant. Bayesian Methods and Modern Statistics 2017
Project Manager and Mentor. Data+ 2017
 Summer research experience for students
Teaching Assistant. Data Analysis and Statistical Inference 2016

Utrecht University, University College Roosevelt
Teaching Assistant. Mathematical Ideas & Methods in Context 2014

**Research
Experience**

Research Assistant 2017 – 2018
 Duke University, Department of Statistical Science

Accenture Fellow 2015 – 2017
 Duke University, Rhodes Information Initiative at Duke

**Service:
To Yale-NUS
College**

Maintenance of the website for the Mathematical, Computational & Statistical Sciences major, 2019 – 2020

Evaluation Committee for Student-Initiated Research Projects of the Summer Research Programme, 2020

Academic Sampler at the Experience Yale-NUS Weekend, 2019

Service: junior-ISBA board, Secretary, 2020 – 2021

Other

ASA DataFest@Duke, VIP Consultant, 2015 – 2017

Graduate Consultative Committee, 2015 – 2016
Duke University, Department of Statistical Science

Journal reviews: Frontiers in Applied Mathematics and Statistics, Journal of the Korean Statistical Society, Stat, Statistics and Computing

Summer Research Supervision

Madhumitha Ayyappan, 2020
Jia Tang, 2020

Capstone Supervision

Ahmed Elsayed Gobba, 2019 – 2020
Haroun Chahed, 2019 – 2020
Sunwoo Nam, 2019 – 2020

Independent Study Supervision

Callie Mao, 2015 – 2016
Gic-Owens Fiestan, 2015 – 2016

Software

github.com/willemvandenboom

van den Boom, W. (2018) `xwf`: An R package for extrema-weighted feature extraction for varying length functional data.

Professional Affiliations

American Statistical Association
International Society for Bayesian Analysis
International Statistical Institute