

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 *Lecturer* 2019 – present
Yale-NUS College, Division of Science

Research Fellow 2018 – 2019
National University of Singapore, Department of Statistics and Applied
Probability
Yale-NUS College, Division of Science 2019

- Publications:**
Peer reviewed
1. 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
 2. 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
 3. 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

4. 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., Reeves, G., and Dunson, D.B. (2019). Approximating posteriors with high-dimensional nuisance parameters via integrated rotated Gaussian approximation. arXiv:1909.06753
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

Yale-NUS College

Instructor of Record. Introduction to Data Science 2019 – present
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**

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

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*, *Statistics and Computing*

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

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

github.com/willemvandenboom

Professional Affiliations

American Statistical Association
International Society for Bayesian Analysis
International Statistical Institute