

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. (2020). Approximating posteriors with high-dimensional nuisance parameters via integrated rotated Gaussian approximation. *Biometrika*, advance online publication. doi:10.1093/biomet/asaa068
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:
Not peer
reviewed**

1. van den Boom, W., Hoy, M., Sankaran, J., Liu, M., Chahed, H., Feng, M., and See, K.C. (2020). Response to letter to the editor. *CHEST*, 158(3), 1287–1288. doi:10.1016/j.chest.2020.04.023
2. van den Boom, W. and Thiery, A. H. (2020). EP-IS: Combining expectation propagation and importance sampling for Bayesian nonlinear inverse problems. In: *Proceeding. ISI World Statistics Congress 2019. Contributed Paper Session. (Volume 2)*, pp. 145–152.

**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		
<i>Instructor of Record</i> . Introduction to Data Science		2019 – 2020
Responsible for the design of this new course		
<i>Instructor of Record</i> . Quantitative Reasoning		2019
Duke University		
<i>Instructor of Record</i> . Data Analysis and Statistical Inference		2017
Full credit course taught online		
<i>Teaching Assistant</i> . Bayesian Methods and Modern Statistics		2017
<i>Project Manager and Mentor</i> . Data+		2017
Summer research experience for students		
<i>Teaching Assistant</i> . Data Analysis and Statistical Inference		2016
Utrecht University, University College Roosevelt		
<i>Teaching Assistant</i> . Mathematical Ideas & Methods in Context		2014

Research Experience

<i>Research Assistant</i>		2017 – 2018
Duke University, Department of Statistical Science		
<i>Accenture Fellow</i>		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: Other	junior-ISBA board, Secretary, 2020 – 2021
	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
	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
Professional Affiliations	International Society for Bayesian Analysis International Statistical Institute