

# Willem van den Boom

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16 College Ave West, #01-220, Singapore 138527  
Tel: +65 6601-5247, Email: willem@yale-nus.edu.sg

<b>Education</b>	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		
<b>Academic positions</b>	National University of Singapore, Yale-NUS College, Division of Science	
	<i>Research Fellow</i>	2020 – present
	<i>Lecturer</i>	2019 – 2020
	<i>Research Fellow</i>	2019
	Agency for Science, Technology and Research (A*STAR), Singapore Institute for Clinical Sciences	
	<i>Visiting Fellow</i>	2020 – present
National University of Singapore, Department of Statistics and Applied Probability		
<i>Research Fellow</i>	2018 – 2019	
<b>Research grants</b>	Principal Investigator, ‘Optimal treatment target identification from longitudinal electronic medical records’, National Medical Research Council, Young Individual Research Grant, S\$298,000	2020 – 2024

**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.

**Invited talks**

1. Bayesian joint modelling of recurrence and survival: A conditional approach. *13th International Conference of the ERCIM WG on Computational and Methodological Statistics and 14th International Conference on Computational and Financial Econometrics*, London, United Kingdom, 2020.
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.

**Contributed talks**

1. EP-IS: Combining expectation propagation and importance sampling for Bayesian nonlinear inverse problems. *62nd ISI World Statistics Congress*, Kuala Lumpur, Malaysia, 2019.

**Poster presentations**

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:  
 Other**

junior-ISBA board, Secretary, 2020 – 2021

Bayesian Young Statisticians Meeting: Online, organizing and scientific committee, 2020

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](https://github.com/willemvandenboom)

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

**Professional  
affiliations**

International Society for Bayesian Analysis  
International Statistical Institute