

Fellow **October 2021 to present**
Bocconi Institute for Data Science and Analytics (BIDSA)
Milano, Italy.

Associate Professor (tenured) **September 2020 to September 2021**
Amsterdam Free University
Amsterdam, The Netherlands.

Associate Professor **January 2019 to September 2020**
University of Leiden
Leiden, The Netherlands.

Assistant Professor **February 2016 to December 2018**
University of Leiden
Leiden, The Netherlands.

Postdoctoral Researcher **February 2015 to February 2016**
University of Amsterdam
Amsterdam, The Netherlands.
Supervisor: Harry van Zanten.
Topic: Statistics on Graphs.

Assistant Professor **September 2014 to October 2017**
Budapest University of Technology, Department of Mathematics.
Budapest, Hungary.

Postdoctoral Associate **March 2014 to August 2014**
ENSAE-CREST
Paris, France.
Supervisor: Judith Rousseau.
Topic: Theoretical investigation of Empirical Bayes method.

Research Assistant **April 2009 to August 2009**
Vrije University Amsterdam, Department of Mathematics.
Amsterdam, The Netherlands.
Supervisor: Harry van Zanten.
Topic: Nonparametric Bayesian Adaptation.

LONGER
RESEARCH
VISITS

Visiting Professor **December 2019**
Collegio Carlo Alberto, Department of Statistics, Torino, Italy.
Host: Matteo Ruggiero.
Tasks: Giving a short course on the asymptotic properties of Bayesian methods.

Fellow **September 2018 to October 2018**
Harvard University, Department of Statistics.
Cambridge, United States.

Collaborator: Natesh Pillai.

Topics: Bayesian post selection inference; Fundamental understanding of distributed methods.

Visiting Researcher

April 2017

University of Sydney, Department of Statistics, Sydney, Australia.

Collaborator: Lamiae Azizi.

Tasks: Giving a short course on the asymptotic properties of Bayesian methods; talk at the research seminar, working on the theoretical validation of various Bayesian methodologies.

Visiting PhD-Student

December 2013 to February 2014

Cambridge University, Statistics Laboratory.

Cambridge, United Kingdom.

Supervisor: Richard Nickl.

Topic: Adaptive and honest confidence sets.

SHORTER
RESEARCH
VISITS

Cambridge (Richard Nickl), Chicago (Chao Gao), Harvard (Natesh Pillai), Kings College London (Kolyan Ray), Oxford (Judith Rousseau), Padova (Antonio Canale), Paris Dauphin (Judith Rousseau), Paris Sorbonne (Ismael Castillo)

SUBMITTED
MANUSCRIPTS

- [1] Nieman, D. Szabo, B.T., & van Zanten, J.H. (2021) Contraction rates for sparse variational approximations in Gaussian process regression. *Arxiv preprint*.
- [2] van Loon, W., de Vos, F., Fokkema, M., Szabo, B., Koini, M., Schmidt, R., de Rooij, M. (2021) Analyzing hierarchical multi-view MRI data with Sta-PLR: An application to Alzheimer's disease classification. *Arxiv preprint*.
- [3] Szabo, B.T., Vuursteen, L. & van Zanten, J.H. (2020) Optimal distributed testing in high-dimensional Gaussian models. *Arxiv preprint*.
- [4] Szabo, B.T. & van Zanten, J.H. (2020) Distributed function estimation: adaptation using minimal communication. *Arxiv preprint*.
- [5] van Loon, W., Fokkema, M., Szabo, B., & de Rooij, M. (2020) View selection in multi-view stacking: Choosing the meta-learner *Arxiv preprint*.

PUBLISHED OR
ACCEPTED
JOURNAL
PUBLICATIONS

- [6] Ray, K. & Szabo, B. (2021+) Variational Bayes for high-dimensional linear regression with sparse priors. *To appear in Journal of American Statistical Association*.
- [7] van Erven, T. & Szabo, B. (2021) Fast Exact Bayesian Inference for Sparse Signals in the Normal Sequence Model. *Bayesian Analysis* 16 (3), 933-960.
- [8] Hadji, A. & Szabo, B. (2021) Can we trust Bayesian uncertainty quantification from Gaussian process priors with squared exponential covariance kernel? *SIAM/ASA Journal on Uncertainty Quantification* 9 (1), 185-230

- [9] Szabo, B. T. & van Zanten, J.H. (2020) Adaptive distributed methods under communication constraints. *Annals of Statistics* 48 (4), 2347-2380.
- [10] Rousseau, J., & Szabo, B. T. (2020) Asymptotic frequentist coverage properties of Bayesian credible sets for sieve priors. *Annals of Statistics* 48 (4), 2155-2179.
- [11] van Loon, W., Fokkema, M., Szabo, B., & de Rooij, M. (2020) Stacked Penalized Logistic Regression for Selecting Views in Multi-View Learning. *Information Fusion* 61, 113-123.
- [12] Mariucci, E., Ray, K., & Szabo, B. T. (2020) A Bayesian nonparametric approach to log-concave density estimation. *Bernoulli* 26 (2), 1070-1097.
- [13] Castillo, I. & Szabo, B. (2020) Spike and slab empirical Bayes sparse credible sets. *Bernoulli* 26 (1), 127-158.
- [14] Ray, K., Szabo, B.T., & van der Vaart, A.W. (2020) Discussion of “Bayesian Regression Tree Models for Causal Inference: Regularization, Confounding, and Heterogeneous Effects” *Bayesian Anal.* 15 (2020), 1026-1028.
- [15] Szabo, B. T. & van Zanten, J.H. (2019) An asymptotic analysis of distributed nonparametric methods. *Journal of Machine Learning Research* 20 (87), 1-30.
- [16] van der Pas, S., Szabo, B. T., & van der Vaart, A.W. (2017) Uncertainty quantification for the horseshoe. **Discussion paper.** *Bayesian Analysis* 12 (4), 1221–1249.
- [17] van der Pas, S., Szabo, B. T., & van der Vaart, A.W. (2017) Rejoinder to discussions to “Uncertainty quantification for the horseshoe”. *Bayesian Analysis* 12 (4), 1270–1274.
- [18] van der Pas, S., Szabo, B. T., & van der Vaart, A.W. (2017) Adaptive posterior contraction rates for the horseshoe *Electronic Journal of Statistics* 11 (2) 3196 – 3225
- [19] Rousseau, J. & Szabo, B. T. (2017) Asymptotic behaviour of the empirical Bayes posterior associated to maximum marginal likelihood estimator. *The Annals of Statistics* 45 (2), 833–865.
- [20] Nickl, R. & Szabo, B. T. (2016) A sharp adaptive confidence ball for self-similar functions. *Stochastics Processes and their Applications* 126 (12), 3913–3934.
- [21] Knapik, B. T., Szabo, B. T., van der Vaart, A. W., & van Zanten, J. H. (2016). Bayes procedures for adaptive inference in nonparametric inverse problems. *Probability Theory and Related Fields* 164 (3), 771–813.

- [22] Szabo, B. T., van der Vaart, A. W., & van Zanten, J. H. (2015) Rejoinder to discussions to “Frequentist coverage of adaptive nonparametric Bayesian credible sets”. *Annals of Statistics*, 43 (4), 1463 – 1470.
- [23] Szabo, B. T., van der Vaart, A. W., & van Zanten, J. H. (2015) Frequentist coverage of adaptive nonparametric Bayesian credible sets. **Discussion paper**. *Annals of Statistics*, 43 (4), 1391 – 1428.
- [24] Szabo, B. T., van der Vaart, A. W., & van Zanten, J. H. (2015). Honest Bayesian confidence sets for the L_2 -norm. *J. Statist. Plann. Inference*, 166, 36–51.
- [25] Szabo, B. T., van der Vaart, A. W., & van Zanten, J. H. (2013). Empirical Bayes scaling of Gaussian priors in the white noise model. *Electronic Journal of Statistics*, 7, 991–1018.
- [26] Turanyi, T., Nagy, T., Zsely, I. Gy., Cserhati, M., Varga, T., Szabo, B. T., Sedyo, I., Kiss, P. T., Zempleni, A., and Curran, H. J. (2012). Determination of rate parameters based on both direct and indirect measurements. *International Journal of Chemical Kinetics*, 44(5), 284–302.
- [27] Varga, L., Szabo, B., Zsely, I. Gy., Zempleni, A., & Turanyi, T. (2011). Numerical investigation of the uncertainty of Arrhenius parameters. *Journal of mathematical chemistry*, 49(8), 1798-1809.
- REFEREED
CONFERENCE
PUBLICATIONS,
COLUMN
ARTICLES AND
REPORTS
- [28] Szabo, B.T. (2021) Product vs mixture of experts: On distributed Gaussian Process regression. *Oberwolfach reports*, 22/2021, p 12-14
- [29] Ray, K., Szabo, B.T. & Clara, G. (2020) Spike and slab variational Bayes for high dimensional. logistic regression. *Advances in Neural Information Processing Systems (NeurIPS)*.
- [30] Ray, K. & Szabo, B. (2019) Debaised Bayesian inference for average treatment effects. *Advances in Neural Information Processing Systems (NeurIPS)*, 11929-11939.
- [31] Szabo, B. T. (2016) Confidence in Bayesian Uncertainty Quantification? *Nieuw Archief voor Wiskunde*, 53–54.
- [32] Szabo, B. T. (2014) Asymptotic behaviour of confidence sets based on empirical Bayes methods in L_2 -norm. *Proceedings of the 18th European Young Statistician Meeting*, 113-117.
- [33] Berg, J. B. van den, Castro, R. M., Draisma, J., Evers, J. H. M., Hendriks, M., Khimshiashvili, G., Krehel, O., Kryven, I., Mora, K., Szabo, B. T. & Zwiernik, P. W. (2012). Non-imaging optics for LED-lighting. *Proceedings of the 84th European Study Group Mathematics with Industry*.
- BOOK CHAPTERS
- [34] Szabo, B. T. (2015). On Bayesian based adaptive confidence sets for linear functionals. *Bayesian Statistics from Methods to Models and Applications*. 91–105.

- R PACKAGES
- [35] Clara, G., Szabo, B.T. and Ray, K. (2020) sparsevb (Variational Bayes for High-dimensional Linear and Logistic Regression)
 - [36] de Rooij, S., van Erven, T., Szabo, B.T. (2019) SequenceSpikeSlab (Exact Bayesian Model Selection Methods for the Sparse Normal Sequence Model)

SUPERVISION OF
PHD STUDENTS

- Dennis Niemann (jointly with Harry van Zanten, co-promotor), 2020-
- Lasse Vuursteen (jointly with Aad van der Vaart, co-promotor), 2019-
- Geerten Koers (jointly with Aad van der Vaart, co-promotor), 2019-
- Azeem Zaman (jointly with Natesh Pillai at Harvard), 2018-
- Stefan Franssen (jointly with Aad van der Vaart, co-promotor), 2018-
- Wouter Loon (jointly with Mark van der Rooij and Marjolein Fokkema, co-promotor), 2017-
- Amine Hadji (jointly with Aad van der Vaart, co-promotor), 2016-
- Stéphanie van der Pas (part of the supervision team lead by Aad van der Vaart, informal supervision), 2015-2017

PHD THESIS
COMMITTEE

- Magnus Munch (Leiden University, 2021).
- Amenah AL-Najafi (University of Szeged, 2021)
- Jenovah Rodrigues (University of Edinburgh, 2020)
- Dong Yan (Leiden University, 2020).
- Nurzhan Nurushev (VU Amsterdam, 2019).

OTHER
SUPERVISION

- 4 master thesis projects
- 8 bachelor thesis projects
- internal supervisor for 1 internship

INVITED
CONFERENCE
AND WORKSHOP
TALKS

- *International Symposium on Nonparametric Statistics*, Paphos, Cyprus (2022).
- *ISBA 2020 World meeting*, Kunming, China (2021).
- *Oberwolfach workshop on “Foundations of Bayesian Inference for Complex Statistical Models”*, Online (2021)
- *Zoom Conference on Uncertainty Quantification*, Online, (2020).
- *Applied Inverse Problems conference*, Grenoble, France (2019)
- *32nd European Meeting of Statistician*, Palermo, Italy (2019).
- *12th Conference on Bayesian Nonparametrics*, Oxford, United Kingdom (2019).
- *11th ERCIM conference*, Pisa, Italy (2018).
- *ISBA 2018 World meeting*, Edinburgh, United Kingdom (2018).
- *2nd EcoSta conference*, Hongkong, China (2018).
- *International one day workshop for Bayesian nonparametrics*, Seoul, South Korea (2018).
- *YES IX workshop on “Scalable Statistics: on Accuracy and Computational Complexity”*, Eindhoven, The Netherlands (2018).
- *10th ERCIM conference*, London, UK (2017).
- *11th Conference on Bayesian Nonparametrics*, Paris, France (2017).
- *Workshop on Statistical Foundations of Uncertainty Quantification for Inverse Problems*, Cambridge, England (2017).
- *1st EcoSta conference*, Hongkong, China (2017).
- *LMS/Turing workshop on Inverse Problems and Data Science*, Edinburgh, United Kingdom (2017).
- *Emerging Applications of Data Assimilation in the Geosciences workshop **tutorial and panel discussion***, Leiden, Netherlands (2017).
- *IMS World Meeting*, Toronto, Canada (2016).
- *Conference on Probability and Statistics in high dimensions*, Barcelona, Spain (2016).
- *ISBA 2016 World meeting*, Cagliari, Italy (2016).
- *SAMSI workshop on Bayesian Nonparametrics*, Raleigh, USA (2015).
- *10th Conference on Bayesian Nonparametrics*, Raleigh, USA (2015).

- *VvS + OR day*, Utrecht, The Netherlands (2015).
- *7th ERCIM conference*, Pisa, Italy (2014).
- *6th ERCIM conference*, London, United Kingdom (2013).
- *9th Conference on Bayesian Nonparametrics*, Amsterdam, The Netherlands (2013).
- *Hilversum meeting*, Hilversum, The Netherlands (2011).
- *STAR lecture day*, Eindhoven, The Netherlands (2010).

INVITED
SEMINAR
TALKS

- *CRiSM seminar*, Warwick, United Kingdom (2022).
- *Statistics Seminar at National U of Singapore*, Singapore, Singapore, Online (2021).
- *Statistics Seminar at Unviersity of Bocconi*, Milan, Italy, Online (2021).
- *Statistics Seminar at Unviersity of Edinburgh*, Edinburgh, United Kingdom, Online (2021).
- *SSIP Seminar at UvA*, Amsterdam, Netherlands, Online (2020).
- *Mathematical Colloquim at Vrije Universiteit*, Amsterdam, Netherlands, Online (2020).
- *Statistics Seminar at Chalmers University*, Gothenburg, Sweden, Online (2020).
- *Statistics Seminar at Cambridge*, Cambridge, United Kingdom (2020).
- *Statistics seminar at Leiden University*, Leiden, The Netherlands (2020).
- *Stochastics Seminar at University of Szeged*, Szeged, Hungary (2019).
- *ENSEA Statistics Seminar*, Paris, France (2019).
- *Stochastics Seminar at Delft University of Technology*, Delft, The Netherlands (2019).
- *Statistics Seminar Series at Universitat Pompeu Fabra*, Barcelona, Spain (2019).
- *Statistics Seminar at Cambridge University*, Cambridge, UK (2019).
- *Statistics Seminar at Padova University*, Padova, Italy (2019).
- *Statistics Seminar at Humboldt-Universität*, Berlin, Germany (2018).
- *Stat 300 Seminar*, Harvard, USA (2018).
- *Wilks Seminar*, Princeton, USA (2018).

- *Statistics seminar at Rutgers University, New Jersey, USA (2018).*
- *Stochastics Seminar at Budapest University of Technology, Budapest, Hungary (2018).*
- *Statistics seminar at Bocconi University, Milano, Italy (2018).*
- *Statistics Seminar of King's College, London, United Kingdom (2018).*
- *KdVI colloquium at University of Amsterdam, Amsterdam (2017).*
- *Statistics seminar of Fudan University, Shanghai, China (2017).*
- *Statistics Seminar at University of Sydney, Sydney, Australia (2017).*
- *Tutorial talks at University of Sydney, Sydney, Australia (2017).*
- *van Dantzig seminar, Delft, The Netherlands (2017).*
- *ELTE Statistics and Probability Theory seminar, Budapest, Hungary (2016).*
- *MIT statistics seminar, Cambridge, USA (2016).*
- *Statistics Seminar Paris 6, Paris, France (2016).*
- *This week's discovery, Leiden, The Netherlands (2016).*
- *Bayes club, Amsterdam, The Netherlands (2015).*
- *Eindhoven Stochastics Seminar, Eindhoven, The Netherlands (2015).*
- *Bayes club, Amsterdam, The Netherlands (2015).*
- *CWI Statistics Seminar, Amsterdam, The Netherlands (2015).*
- *Stochastics Seminar BME, Budapest, Hungary (2014).*
- *BME Statistics Learning Seminar, Budapest, Hungary (2014).*
- *Seminaire de Statistique de l'IRMAR, Rennes, France (2014).*
- *Machine Learning @ CUED seminar, Cambridge, United Kingdom (2014).*
- *Statistics Seminar Collegio Carlo Alberto, Turin, Italy (2012).*
- *The Bayes Club, Amsterdam, The Netherlands (2012).*
- *ELTE Statistics and Probability Theory seminar, Budapest, Hungary (2012).*
- *Informal Meeting Statisticians and Probabilists, Eindhoven, The Netherlands (2011).*

SELECTED
CONTRIBUTED
TALKS

- *30th European Meeting of Statistician*, Amsterdam, The Netherlands (2015).
- *ISBA 2014 World meeting*, Cancun, Mexico (2014).
- *18th European Young Statisticians Meeting*, Osijek, Croatia (2013).
- *29th European Meeting of Statistician*, Budapest, Hungary (2013).

ASSOCIATE
EDITOR

Bayesian Analysis (2016-)

Journal of Statistical Planning and Inference (2017-)

REFeree
SERVICE

The American Statistician; Annales de l'Institut Henri Poincare; Annals of Statistics; Bernoulli; Biometrika; Bayesian Analysis; Electronic Journal of Statistics; IEEE Information Transmission, Information and Inference: A Journal of the IMA; Inverse Problems; Journal of American Statistical Association; Journal of Business and Economic Statistics; Journal of Machine Learning Research; Journal of Multivariate Analysis; Journal of Statistical Planning and Inference; Mathematics of Computation; Mathematical Reviews; Probability Theory and Related Fields; Sankhya - The Indian Journal of Statistics; Scandinavian Journal of Statistics; SIAM/ASA Journal on Uncertainty Quantification; SIAM Journal on Mathematics of Data Science; Statistical Science; Statistics Surveys; Stochastic Processes and their Applications, Synthese
Grant proposal reviewer: OTKA (Hungarian science fundation); FONDECYT (Science fundation in Chile)
Conference reviewer: NeurIPS (2016, 2020)

ORGANIZATION
SERVICE

Scientific Program Committees:

- ISBA 2022 conference in Montreal (chair)
- IMS World congress 2022 (Contributed Talk Program Committee)
- 1st BNP network workshop 2022 in Cyprus
- 22nd EYSM 2021 in Athen (International Organizing Committee)
- 1st EcoSta 2018 conference in Hong Kong

Seminars:

- Interdisciplinary seminar between Physicists, Cosmologists and Statisticians (2019 -2021)
- (International) Bayes club (2017-)
- LUXs seminar (2019 - 2020).
- Reading group: statistics for astronomy (2020)
- Statistics for Structures Seminar/Thematic Statistics Seminar (2015 - 2020)

Workshops/conferences:

- 60th Birthday conference for Aad van der Vaart in 2019.

- YES X workshop on “Deep learning” in 2019.
- YES IX workshop on “Scalable statistical methods” in 2018.
- Lorentz center workshop on “Uncertainty quantification in complex, non-parametric statistical models” in 2018.
- YES VIII (Young European Statistician) workshop on “Uncertainty quantification” in 2017.

Sessions:

- “Recent advances in Bayesian nonparametric theory” at EcoSta 2018 (Hong Kong).

ADMINISTRATIVE SERVICE Member of the European Regional Committee (ERC) of the Bernoulli Society (2021-2025)

ISBA Vice Chair, Program Chair, Past Chair (2020-2022)

Board member and webmaster of the Mathematical statistics section of VvSOR (September 2017 - 2020)

Coordinator of MiDaS (Complex Data Modeling Research Network) (2020-)

Member of the Board of Examiners of the Mathematics and Business Analytics master and bachelor programs at VU Amsterdam (2021)

Information and Representation Committee at VU Amsterdam (2020-2021)

Secretary of the Board of Examiners of the Statistical Science master at Leiden University (2019 - 2020)

GRANTS “Innovational Research Incentives Scheme VENI 2016” (250.000 euro).

“Institute of Mathematical Statistics IMS Travel Award 2016” (700 dollar).

“New Researcher Travel Grant for ISBA 2016”, (1000 euro).

“Junior Travel Award for ISBA 2014”, (250 euro).

“World Meeting of the International Society for Bayesian Analysis Early Career Researchers Travel Grant 2012”, (500 euro).

AWARDS, PRIZES “Savage Award in Theory & Methods: Honorable Mention” (Runner up for the best PhD dissertation in the field of Bayesian statistics and econometrics in the category Theory & Methods 2016).

“Van Zwet Award” (Award for the best PhD dissertation in the Netherlands in Statistics and Operation Research 2015).

Hungarian Students' Scholarly Circle (OTDK) first prize in the local (2009), second prize in the national (2011) competition. Title: *Investigating the boundedness property of direction-length mixed graphs*. Supervisor: Dr. Tibor Jordán.

"Excellent student of the faculty" award, (2009), Eötvös Loránd University.

SCHOLARSHIPS VU Fellowship Program - VUFP 2008/2009.

Study Scholarship 2004-2008 at ELTE.

Scientific Scholarship 2010 at ELTE.

TEACHING
EXPERIENCE University Teaching Qualification (BKO)
with English Language Proficiency Qualification (BKE) level C1+

Bocconi University, Milano, Italy.

Lecturer **September 2021 to present**

- Mathematical Statistics for BSc Artificial Intelligent (Bocconi, 2021-)
- Mathematical Statistics I and II for PhD students (Bocconi, 2022-)

Vrije Universiteit Amsterdam, Amsterdam, The Netherlands.

Lecturer **September 2020 to September 2021**

- Sets and Combinatorics (VU, 2020-)
- Bayesian Statistics (MasterMath, 2017-)
- Bachelor project: business case supervision (VU, 2021-)
- Statistics and Probability for Mechanical Engineering (VU, 2021-)

Leiden University, Leiden, The Netherlands.

Lecturer **January 2017 to 2020**

- Quantitative Research (at LUC, 2017-2019)
- Bayesian Statistics (MasterMath, 2017-)
- Statistics for Physics and Astronomy (Leiden University, 2018, 2019)
- Mathematical Statistics (Leiden University, 2019)

Budapest University of Technology, Budapest, Hungary.

Lecturer **September 2014 to February 2015**

- Calculus A2.

Instructor **September 2014 to February 2015**

- Probability Theory.

University of Amsterdam, Amsterdam, The Netherlands.

co-Lecturer **September 2015 to December 2015**

- Stochastics and Financial Mathematics program of the Seminar Mathematics.

Instructor **October 2012 to December 2013**

- Asymptotic Statistics (Mastermath course).

Eindhoven University of Technology, Eindhoven, The Netherlands.

Instructor **April 2010 to November 2012**

- Probability Theory (2DI25),
- Statistics (2DI35),
- Calculus (2WAB0, 2WBB0),
- Introduction to derivative pricing (2DF06, 2DF07).

Eötvös Loránd University, Budapest, Hungary.

Instructor **September 2007 to December 2009**

- Probability Theory,
- Statistics.

Grader **September 2004 to May 2007**

- Highschool Mathematics Journal (KöMaL) competition corrector.

COMPUTER SKILLS Programming languages: R, Matlab, Maple, C++.

LANGUAGE SKILLS Hungarian (native speaker), English (fluent), German (intermediate), Dutch (intermediate).

HOBBIES Football, squash, reading.