Lasse Vuursteen

The Wharton School
Department of Statistics & Data Science
University of Pennsylvania
Philadelphia, PA 19104

lassev@wharton.upenn.edu
My Google Scholar
https://lassev.github.io/
Phone: +1 (267) 969 9941

Research interests
High-dimensional and nonparametric statistics, adaptation, semi-parametric statistics, distributed methods, privacy, Bayesian methods, causal inference and information theory.

Current
Wharton, University of Pennsylvania (Dec. 2023 - onward)
Topic: Postdoctoral researcher mathematical statistics
Department of Statistics and Data Science
Supervisor: Prof. dr. T. Tony Cai

Education
Delft University of Technology (Sept. 2019 - Nov. 2023)
Ph.D. in the field of Mathematical Statistics.
Topics: Distributed inference and other topics in high-dimensional and nonparametric settings.
Advisers: Prof. dr. Botond Szabó, Prof. dr. Aad van der Vaart, Prof. dr. Harry van Zanten

Vrije Universiteit Amsterdam (Sept. 2017 - July 2019)
MSc Stochastics and Financial Mathematics (cum laude),
Thesis topic: Adaptive Bayesian inference for multi-dimensional diffusion
Adviser: Prof. dr. Harry van Zanten
144 ECTS in mathematics, statistics and stochastics coursework.

Rijksuniversiteit Groningen (Sept. 2013 - June 2017)
BSc in Econometrics & Operations Research
180 ECTS in Econometrics & Operations Research
55 ECTS in Mathematics and Computer Science.

Research visits
Wharton, University of Pennsylvania (Oct. - Nov. 2022)
Department of Statistics and Data Science
Host & Supervisor: Prof. dr. T. Tony Cai
Topic: Optimal distributed testing under privacy constraints

Referee services
Reviewer for Annals of Statistics, Bayesian Analysis, Operations Research and Journal of Statistical Planning and Inference.

Publications	**Optimal high-dimensional and nonparametric distributed testing under communication constraints (2023)** Annals of Statistics (2023) Authors: Botond Szabó, Lasse Vuursteen, Harry Van Zanten **Optimal testing using combined test statistics across independent studies** Thirty-seventh Conference on Neural Information Processing Systems (2023) Authors: Botond Szabó, Aad van der Vaart, Lasse Vuursteen, Harry Van Zanten **Optimal Distributed Composite Testing in High-dimensional Gaussian Models with 1-bit Communication (2022)** IEEE Transactions on Information Theory Authors: Botond Szabó, Lasse Vuursteen, Harry Van Zanten **Optimal Private and Communication Constraint Distributed Goodness-of-Fit Testing for Discrete Distributions in the Large Sample Regime (2024)** To appear in Thirty-eight Conference on Neural Information Processing Systems Authors: Lasse Vuursteen For a full list of preprints and ongoing projects on https://lassev.github.io/.
Preprints & ongoing projects	**Optimal Federated Learning for Nonparametric Regression with Heterogenous Distributed Differential Privacy Constraints** Authors: T. Tony Cai, Abhinav Chakraborty and Lasse Vuursteen arXiv preprint **Federated Nonparametric Hypothesis Testing with Differential Privacy Constraints: Optimal Rates and Adaptive Tests** Authors: T. Tony Cai, Abhinav Chakraborty and Lasse Vuursteen arXiv preprint **A semiparametric Bernstein-von Mises theorem for linear regression** Authors: Ismael Castillo, Stephanié van der Pas, Kolyan Ray and Aad van der Vaart, Lasse Vuursteen **The Cost of Adaptation under Differential Privacy (working title)** Authors: T. Tony Cai, Abhinav Chakraborty and Lasse Vuursteen **Optimal private functional mean estimation (working title)** Authors: T. Tony Cai, Abhinav Chakraborty and Lasse Vuursteen
Selected Talks	• Bernoulli-IMS Worldcongress 2024 - Privacy session • JSM 2024 - Advances in nonparametric inference session • George Mason 2024 - Statistics Seminar • ICSDS 2023 - Student travel award session • Neurips 2023 - Poster

- Université Versailles Saint Quentin 2023 - Probability and Statistics Seminar
- EMS 2023 - Theory for Bayesian nonparametrics Invited Session
- Approximation Methods in Bayesian Analysis CIRM 2023 - Short talk
- Bocconi University - Workshop on Theory for Scalable,
Modern Statistical Methods 2023 - Invited talk
- Bocconi University - Statistics Seminar 2023
- Wharton 2022 - PhD Seminar Theoretical Statistics
- ISBA 2022 - Scalable inference session
- ISBA 2022 - Poster session
- BAYSM 2022 - Poster session
- BNP Networking Workshop 2022 - Contributions to Bayesian
  modeling and its applications to life sciences
- JSM Invited speaker Bayesian Methods and Approaches
  in Big Data Analysis Session 2021
- Stochastics Meeting Lunteren - Poster session 2021
- End-to-end Bayesian learning - Bayes at CIRM - Poster session 2021
- EcoSta Invited speaker Recent advances in Baysian Analysis Session 2021
- Brown University Roberta de Vito Biostatistics Group Meeting 2021
- IMS Bernoulli Nonparametric statistics session 2020

Awards

- ICSDS Student Travel Award 2023
- IMS Hannan Graduate Student Travel Award 2023
- ISBA 2022 New Researcher Travel Award
- 13th International Conference on Bayesian Nonparametrics Travel Award

Additional activities

Co-organizer of the DIAM PhD Forum at the TU Delft (2023-currently)
Co-organizer of *Statistics for Astronomy reading group*
at Mathematical Institute at Leiden University (2019-2020).

Active participant in reading groups / seminars:
"*Weak Convergence and Empirical Processes*" (Wellner & vd Vaart),
"*Semiparametric Statistics*" (Aad van der Vaart),
"*Asymptotic Statistics*" (Aad van der Vaart),
organized by Stefan Franssen.
Cambridge reading group "*Fundamentals of Nonparametric
 Bayesian Inference*" (Ghoshal & vd Vaart)
Causality reading group organized by Stephanié van der Pas.

Teaching

TU Delft
Lecturer for Statistical Methods 2021-2022

Leiden University
Lecturer for Introduction to Statistics 2020-2021
Lecturer for Mathematics for Statisticians 2019-2020

**Various TAships at Rijksuniversiteit Groningen, VU Amsterdam,
Leiden University and Delft University of Technology**
Measure Theory, Linear Algebra, Calculus, Statistical Data Analysis
Probability Theory, Probability Distributions, Estimation Theory,
and Statistical Modeling.

Supervision experience	Supervised Bachelor Thesis of Chris Vermeulen (Leiden University) Assisted in the supervision of the Bachelor Thesis of Timo van der Poel, jointly with Botond Szabó (Leiden University)
Languages	Dutch (native), English (C2 based on TOEFL), German (beginner)
Programming skills	**Over 10,000 lines:** C, R, Java, LaTeX **Over 1000 lines:** Python, LISP, VBA, C++
Hobbies	Running, hiking, bouldering, poker, chess, reading.