

Curriculum Vitae of Sven Wang

Email: sven.wang@epfl.ch
Website: svenwang.eu
Postal address: EPFL
Institute of Mathematics (MATH)
Station 8
CH-1015 Lausanne
Switzerland
Place and date of birth: 27 October 1995
Frankfurt am Main
Germany

RESEARCH INTERESTS

Within mathematical statistics, I have worked extensively on the theory of Bayesian inference, high-dimensional Markov chain Monte Carlo (MCMC) and computational complexity, especially in the context of inverse problems with partial differential equations (PDE) or stochastic processes, which are often motivated by applications e.g. from physics and medical imaging. Further, I am interested in interdisciplinary problems with societal focus. Recently, I worked on social choice theory and its interplay with statistics; especially algorithmic aspects of democratic innovations such as randomly selected citizens' assemblies.

EMPLOYMENT

Tenure Track Assistant Professor École Polytechnique Fédérale de Lausanne, Institute of Mathematics Chair of Statistics and Learning Theory	since 09/2025
Assistant Professor (W1 Juniorprofessor) Humboldt University Berlin, Department of Mathematics	09/2023-08/2025
Postdoc in Statistics MIT, Institute for Data, Systems and Society, USA Mentor: Youssef Marzouk	04/2021-08/2023

EDUCATION

PhD in Mathematical Statistics University of Cambridge, Trinity College, UK Advisor: Richard Nickl Thesis examiners: Gabriel Paternain and Aad van der Vaart Thesis title: Statistical inference and computation in elliptic PDE models	2016-2020
MASt in Mathematics University of Cambridge, Trinity College, UK Final grade: 84, with distinction (best: 100)	2015-2016
BSc in Mathematics Ludwig Maximilian University Munich Final grade: 1.06 (best: 1.0), minor in Philosophy	2012-2015
Abitur, Friedrich-Dessauer-Gymnasium, Aschaffenburg Final grade 1.0 (best: 1.0)	2005 - 2012

SELECTED AWARDS & DISTINCTIONS

Elected member of the Junge Akademie One of ten elected members 2024-2029, elected by the Leopoldina and the BBAW.	2024–2029
Research scholarship, Trinity College, Cambridge Awarded to top ~10% of each PhD cohort at Trinity College.	2016–2020
Scholarship, Studienstiftung des deutschen Volkes Including full scholarship to study at Cambridge University 2015–2016.	2012–2016
Full scholarship, Maximilianeum Foundation Full scholarship for undergraduate studies at LMU Munich, awarded annually to top 5–8 high school graduates in Bavaria.	2012–2015

PUBLICATIONS AND PREPRINTS

- *Statistical Learning Theory for Neural Operators.*
N. Reinhardt, S. Wang and J. Zech. Preprint (2024).
- *Statistical algorithms for low-frequency diffusion data: A PDE approach.*
M. Giordano and S. Wang. *Annals of Statistics* (2025).
- *Distribution learning via neural differential equations: a nonparametric statistical perspective.*
Y. Marzouk, R. Ren, S. Wang and J. Zech. *Journal of Machine Learning Research* (2024).
- *Wasserstein distributionally robust Gaussian process regression and linear inverse problems.*
X. Zhang, J. Blanchet, Y. Marzouk, V.A. Nguyen and S. Wang. *Annals of Applied Probability* (2025).
- *Wasserstein-based minimax estimation of dependence in multivariate extremes.*
X. Zhang, J. Blanchet, Y. Marzouk, V.A. Nguyen and S. Wang. Preprint (2023).
- *Infinite-dimensional diffusion models for function spaces.*
J. Pidstrigach, Y. Marzouk, S. Reich and S. Wang. Preprint (2023), minor revisions at *Journal of Machine Learning Research*.
- *Manipulation-robust selection of citizens' assemblies.*
B. Flanigan, J. Liang, S. Wang and A. Procaccia. *Proceedings of AAI* (2024).
- *Towards accounting for stakes in voting.*
B. Flanigan, A. Procaccia and S. Wang. *Foundations of Responsible Computing* (2023).
- *On free energy barriers in Gaussian priors and failure of MCMC for high-dimensional unimodal distributions.*
A.S. Bandeira, A. Maillard, R. Nickl and S. Wang. *Philosophical Transactions of the Royal Society A*, 381:20220150 (2023).
- *Distortion under public-spirited voting.*
B. Flanigan, A. Procaccia and S. Wang. *Economics and Computation (EC)* (2023).
- *On minimax density estimation via measure transport.*
S. Wang and Y. Marzouk. Preprint (2022), extended version forthcoming.
- *Laplace priors and spatial inhomogeneity in Bayesian inverse problems.*
S. Agapiou and S. Wang. *Bernoulli*, 30(2):878–910 (2024).
- *On polynomial-time computation of high-dimensional posterior measures by Langevin-type algorithms.*
R. Nickl and S. Wang. *Journal of the European Mathematical Society*, 26:1031–1112 (2024).

- *Convergence rates for penalised least squares estimators in PDE-constrained regression problems.*
R. Nickl, S. van de Geer and S. Wang. *SIAM/ASA Journal on Uncertainty Quantification*, 8(1):374–413 (2020).
- *The nonparametric LAN expansion for discretely observed diffusions.*
S. Wang. *Electronic Journal of Statistics*, 13(1):1329–1358 (2019).
- *PhD Thesis: Statistical inference and computation in PDE models.*
University of Cambridge (2021).

MENTORSHIP OF PHD STUDENTS

- Ly Duc Hoang (HU Berlin, since 2025)
- Secondary supervision of Robert Ren (MIT, 2021-2024) and Niklas Reinhardt (Heidelberg, since 2024).

GRANTS AND FUNDING

DFG MATH+ Excellence Cluster Berlin 2024/01-2025/12
 Postdoctoral position for project EF6-2 ‘Deliberation Processes in Citizens’ Assemblies: An Experimental Design perspective’ (main PI, co-PIs C. Schillings and J. Heitzig).
 Personal share: **176.360 Eur.**

DFG Special Priority Program 2298 ‘Foundations of Deep Learning’ 2024/10-2027/09
 Doctoral position (75%) for project ‘Operator Learning for Optimal Control: Approximation and Statistical Theory’ (co-PIs E. Herberg and J. Zech).
 Personal share **237.534 Eur.**

DFG Transregio 388 ‘Rough Analysis, Stochastic Dynamics and Related Fields’ 2024/10-2028/09
 1/2 Postdoctoral position for project B08 ‘Bayesian inference and mean field approximation for non-linear (S)PDE’ (co-PIs C. Schillings and V. Spokoiny).
 Personal share **160.200 Eur.**

SCIENTIFIC ACTIVITIES

Over 40 invited seminar and conference talks in the last 3 years.

Selected invited talks:

- Foundations of Computational Mathematics (2026).
- IMS World Congress (2024).
- European Congress of Mathematics, Sevilla, session on Inverse Problems (2024).
- Oberwolfach (2022, 2023, 2024, 2025, 2026).
- SIAM Conference on Uncertainty Quantification (2022, 2024).
- SIAM Conference on Computational Science and Engineering (2023).
- Foundations of Responsible Computing (2023).
- Economics and Computation (2023).
- Applied Inverse Problems (2023).
- ESI workshop: *Statistical estimation and deep learning in UQ for PDEs* (2022).

- Bayesian Nonparametrics (BNP) Conference, Cyprus (2022).
- AMS Western Sectional Meeting (2022).
- BANFF workshop: *Statistical Aspects of Non-Linear Inverse Problems* (2021).
- Conference on Bayesian Nonparametrics, Oxford (2019).
- Selected seminar talks: ETH Foundations of Data Science Seminar (2026); Cambridge Statistical Laboratory Seminar (2025); MIT Probability Seminar (2023); University of Chicago Statistics Colloquium (2020); CMX Seminar, Caltech (2020); WIAS Forschungsseminar Mathematische Statistik, Berlin (2023).

Selected conference organisation:

- Organiser, MFO workshop *Statistical analysis of black box models*, Oberwolfach 2027
- Organiser, Bernoulli *Young Researchers in Mathematics Program*, EPFL Bernoulli Center, 2026 Lausanne
- Session organiser, *Inference for Diffusion Processes*, ISBA 2026.
- Session organiser, *Statistical Learning Theory in Scientific Machine Learning*, ENUMATH 2025 Heidelberg
- Session organiser, *Statistical and Computational Guarantees for Non-Linear Inverse Problems*, Applied Inverse Problems 2023, Göttingen
- Organiser, *Mathematical Statistics Seminar*, Weierstrass Institute (2023–2025), Berlin

OTHER WORK & LEADERSHIP EXPERIENCE

Staff collaborative pianist, MIT music department 2021–2022
Coached students holding an *Emerson/Harris Program scholarship* in music performance.

Data scientist (internship), QuantCo 2020
Implementation of graph Tikhonov regularisation for spatial statistical modeling (in Python), now used across the company.

President, Trinity Responsible Investment Society 2019–2020
Led student group advocating for the responsible investment of Trinity College's £1.5bn endowment. Contributed to Trinity College's 2021 decision to fully divest from fossil fuels and adopt net zero emission targets by 2050.

Cycling for Syria 2015
Six-month charity bike tour across Europe (12.000km). Collected Eur 20.000 for charity organization *Doctors of the World*.

MUSIC

As a pianist, I have performed in various recitals in UK, Germany and USA since 2016, and I continue for perform occasionally, especially in art song and chamber music. I have been prize-winner at several competitions, such as Cambridge University's Edith Leigh Piano Prize (2018) and 'Jugend Musiziert' (2003–2012). I studied piano with Prof. Wolfgang Schamschula (Mainz), Prof. Joseph Middleton (Cambridge) and Prof. Ran Blake (Boston), and voice with Prof. Michael Schopper (Munich).