Mario Teixeira Parente
Academic CV

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Experience

10/2023 – 03/2024	*Ludwig-Maximilians-Universität München (LMU)*
	Interim Professor for Computational Statistics and Data Science (W2)
	Advanced Mathematical Methods in Statistics, Optimization for Machine Learning
03/2021 – 09/2023	*University of Applied Sciences Munich (HM)*
	Lecturer
	Uncertainty Quantification, Linear Algebra
10/2020 – 09/2023	*Jülich Centre for Neutron Science (JCNS)*
	Postdoctoral researcher
	Machine learning-based data acquisition of neutron experiments
10/2016 – 09/2020	*Technical University of Munich (TUM)*
	Scientific employee
	Research and teaching in applied mathematics

Education

10/2016 – 09/2020	*Technical University of Munich (TUM)*
	Mathematics (Dr. rer. nat.)
PhD Thesis	Active Subspaces in Bayesian Inverse Problems
10/2013 – 04/2016	*Ludwig-Maximilians-Universität München (LMU)*
	Mathematics (M.Sc.)
Master Thesis	Brownian Motion and the Dirichlet Problem
10/2010 – 09/2013	*University of Applied Sciences Munich (HM)*
	Scientific Computing (B.Sc.)
Bachelor Thesis	N.V. Krylov's Proof of the de Moivre-Laplace Theorem

Scholarships

04/2012 – 05/2016	**German Academic Scholarship Foundation** (Studienstiftung des deutschen Volkes)
04/2012 – 04/2016	**Max Weber Program of the State of Bavaria** (Max Weber-Programm Bayern)
10/2011 – 03/2012	**Deutschlandstipendium**

Volunteering

10/2021 – now	**Mentor for the Max Weber Program of the State of Bavaria**. Supervision of scholarship holders. Munich
2016 – now	**Committee member for admissions seminars of the German Academic Scholarship Foundation**. Evaluation of personal interviews and group discussions. Germany
03/2015 – 02/2016	**Volunteer at Salesianum München**. Support for refugees and other disadvantaged young people

Teaching

Winter 2023/24	**Advanced Mathematical Methods in Statistics**, **Optimization for Machine Learning**. *Substitute Professor*. LMU
Summer 2023	**Fundamentals of Uncertainty Quantification**. *Lecturer*. HM
Winter 2022/23	**Linear Algebra**. *Lecturer*. HM
Summer 2022	**Fundamentals of Uncertainty Quantification**. *Lecturer*. HM

Winter 2021/22	**Linear Algebra**. *Lecturer*. HM
Summer 2021	**Fundamentals of Uncertainty Quantification**. *Lecturer*. HM
Summer 2020	**Mathematical Models for UQ in Hydrology**. *Module construction*. TUM
Winter 2019/20	**Introduction to Numerical Linear Algebra**. *Exercise coordinator*. TUM
Summer 2019	**Numerics of PDEs for Engineers**. *Exercise coordinator*. TUM
Winter 2018/19	**Modeling and Simulation with ODEs**. *Tutor*. TUM
Summer 2018	**Numerics of ODEs**. *Tutor*. TUM
Winter 2017/18	**Introduction to Numerical Linear Algebra**. *Tutor*. TUM
Summer 2017	**Introduction to Programming**. *Tutor*. TUM
Summer 2017	**Hauptseminar: Uncertainty Quantification with Efficient Monte Carlo Methods**. TUM
Winter 2015/16	**Stochastics**. *Tutor*. LMU
Winter 2014/15	**Analysis I**. *Tutor*. LMU
Winter 2011/12	**Linear Algebra**, **Software Engineering**. *Tutor*. HM

Certificates

2017 – 2019	**Certificate for Teaching in Higher Education of the Bavarian Universities**. *Advanced level*. TUM ProLehre
2017 – 2019	**Certificate for Teaching in Higher Education of the Bavarian Universities**. *Introductory level*. TUM ProLehre

Journal articles

2023	**TP., M.**, Brandl, G., Franz, C., Stuhr, U., Ganeva, M. & Schneidewind, A., (2023). Active learning-assisted neutron spectroscopy with log-Gaussian processes. *Nature Communications* **14**, 2246. doi: 10.1038/s41467-023-37418-8
2022	**TP., M.**, Schneidewind, A., Brandl, G., Franz, C., Noack, M., Boehm, M., & Ganeva, M. (2022). Benchmarking autonomous scattering experiments illustrated on TAS. *Frontiers in Materials* **8**, 772014. doi: 10.3389/fmats.2021.772014
2020	**TP., M.**, Wallin, J., & Wohlmuth, B. (2020). Generalized bounds for active subspaces. *Electronic Journal of Statistics* **14**(1), 917–943. doi: 10.1214/20-EJS1684
2020	Bittner, D., **TP., M.**, Mattis, S., Wohlmuth, B., & Chiogna, G. (2020). Identifying relevant hydrological and catchment properties in active subspaces: An inference study of a lumped karst aquifer model. *Advances in Water Resources* **135**, 103472. doi: 10.1016/j.advwatres.2019.103472
2019	**TP., M.**, Bittner, D., Mattis, S., Chiogna, G., & Wohlmuth, B. (2019). Bayesian calibration and sensitivity analysis for a karst aquifer model using active subspaces. *Water Resources Research* **55**(8), 7086–7107. doi: 10.1029/2019WR024739
2019	**TP., M.**, Mattis, S., Gupta, S., Deusner, C., & Wohlmuth, B. (2019). Efficient parameter estimation for a methane hydrate model with active subspaces. *Computational Geosciences* **23**(2), 355–372. doi: 10.1007/s10596-018-9769-x

Talks, Conferences, etc.

06/2023	**Helmholtz AI Conference 2023**. *Active learning-assisted neutron spectroscopy with log-Gaussian processes*. Helmholtz AI, Helmholtz Association
04/2023	**Machine Learning Workshop**. *Active learning-assisted neutron spectroscopy with log-Gaussian processes*. Lawrence Berkeley National Laboratory
03/2023	**ECNS 2023**. *AI-assisted neutron spectroscopy - Log-Gaussian processes for TAS*. Heinz Maier-Leibnitz Zentrum
10/2022	**JCNS Workshop** (invited talk). *AI-assisted neutron spectroscopy - Log-Gaussian processes for TAS*. Jülich Centre for Neutron Science
12/2021	**MLZ User Meeting**. *Benchmarking autonomous TAS experiments*. Heinz Maier-Leibnitz Zentrum
11/2021	**Workshop on SAXS@XFELs and HI & HE laser driven matter**. *Benchmarking autonomous TAS experiments*. Helmholtz-Zentrum Dresden-Rossendorf

10/2021	**Workshop on Innovative Inelastic Neutron Scattering**. *Benchmarking autonomous scattering experiments illustrated on TAS*. Institut Laue-Langevin
02/2021	**Workshop on Autonomous Discovery in Science and Engineering**. *Autonomous Experiments for Neutron Three-Axis Spectrometers (TAS) with Log-Gaussian Processes*. Center for Advanced Mathematics for Energy Research Applications, Lawrence Berkeley National Laboratory
03/2020	**SIAM UQ 2020**. *Solving a Bayesian Inverse Problem for a Karst Aquifer Model with Active Subspaces*. Garching (canceled due to outbreak of SARS-CoV-2)
05/2019	**Statistics Seminar**. *Active subspaces in Bayesian inverse problems*. Department of Statistics, Lund University
03/2018	**M2 Oberseminar**. *Active subspaces for Bayesian inversion, Application for a methane hydrate model*. Garching

Trainings

03/2017	**Parallel Programming of High Performance Systems**. Leibniz Computing Centre (LRZ)
02/2017	**Advanced C++ with Focus on Software Engineering**. Regionales RechenZentrum Erlangen (RRZE)

Other experiences

05/2019	**Research stay abroad**. Department of Statistics, Lund University. Topic: Theory of active subspaces
02/2019 – 03/2018	**Research stay abroad**. University of Texas at Austin (UT). Project: UNcertainties due to boundary conditions in predicting MIXing in groundwater (UNMIX)
06/2016 – 09/2016	**Student assistant**. HM. Project: Modeling and simulation of pedestrian movement
04/2016 – 05/2016	**Research internship**. Yale University (USA). Topic: Image processing of nanoscopic images in cell biology
10/2012 – 11/2013	**Student assistant**. HM. Project: Modeling and simulation of pedestrian movement

Kirchheim b. München, September 18, 2023