Imke Mayer

PhD, statistics and applied math

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	Research experience and professional activities		
2022	Visiting researcher (5 weeks) , Simons Institute for the Theory of Computing, UC Berkeley, Berkeley, CA, USA. Causality program.		
2021–Present	Associated Researcher, Inria Sophia-Antipolis, Montpellier, France. Project team PreMediCaL.		
2021–Present	Research Associate , <i>Institute of Public Health, Charité – Universitätsmedizin</i> , Berlin, Germany. NeTKoH SW-CRT; causal inference methodology for public health.		
2020	Visiting student researcher (interrupted; planned: 4 months) , <i>Biomedical Informatics Research Center, Stanford University</i> , Stanford, CA, USA. Causal inference, policy learning. Interrupted due to COVID-19. Advisors: Stefan Wager & Nigam Shah.		
2019–2021	Teaching assistant, École Polytechnique, Palaiseau, France.		
2018–2021)18–2021 PhD candidate , <i>École des Hautes Études en Sciences Sociales & École Polytechni</i> Paris & Palaiseau, France.		
	Analysis of heterogeneous data with missing values – Application to critical care management. Statistics, machine learning, personalized medicine. Advisors: Jean-Pierre Nadal & Julie Josse.		
2018	8 Visiting student researcher (5 months), Biomedical Engineering Department, Johns Hopkins University, Baltimore, MD, USA.		
0017	Theoretical guarantees for sparse dictionary learning (Master's thesis). Advisor: Rene Vidal.		
2017	Research intern (2 months) , <i>Sorbonne Université</i> , Paris, France. False discovery rate control in linear models. Advisors: Claire Boyer & Maxime Sangnier.		
2016	Working student (7 months) , <i>Foodora GmbH</i> , Berlin, Germany. Data analysis and forecasting for logistics operations and business intelligence.		
2013	Intern (1 month) , <i>DRK Klinikum Westend</i> , Berlin, Deutschland. Nursing assistant in the surgical department.		
	Teaching		
Summer 2022	Master's thesis advisor , <i>Charité Universitätsmedizin</i> , Berlin, Germany. MSc Public Health.		
Summer 2022	Course instructor , <i>Charité Universitätsmedizin</i> , Berlin, Germany. MSc Epidemiology.		
Summer 2021	Internship advisor , <i>Inria</i> , Montpellier, France. Pre-doctoral internship of Pan Zhao. Topic: Creation of a reference platform for R implementations of causal inference methods.		
Winter 2021	Course instructor , <i>AI4Health Winter School</i> , Paris, France. Causal inference for observational clinical data.		

Spring 2020 **Teaching assistant**, *École Polytechnique - IPP*, Palaiseau, France. Causality and missing values (Master level).

- Summer 2019 Internship advisor, *École Polytechnique IPP*, Palaiseau, France. Master 1 internship of Teresa Alves de Sousa. Topic: matching methods to assess the impact of tranexamic acid on survival for major trauma patients with head injury.
 - Spring, FallTeaching assistant, École Polytechnique HEC, Palaiseau, France.2019Regression, Unsupervised Learning and Data Analysis, Data for Management (Master level).

Education and scholarships

- 2020-2021 Google PhD Fellowship, Machine Learning.
 - 2020 Fondation Sciences Mathématiques de Paris (FSMP) travel scholarship for predoctoral research visit, *Stanford University*, Stanford, CA, USA.
- 2017–2018 Master 2 Mathematics and applications (Mathématiques, Vision, Apprentissage), highest honors, ENS Paris-Saclay, Cachan, France.
- 2016–2017 Master 1 Mathematics and applications, highest honors, *Sorbonne Université*, Paris, France.
 - 2015 **FSMP travel scholarship for applied mathematics undergraduate summer school**, *Brown University*, Providence, RI, USA.
- 2013–2016 Bachelor double degree mathematics and computer science, highest honors, *Sorbonne Université*, Paris, France.
- 2013–2018 **Excellence Major honor scholarship**, *Agence pour l'Enseignement Français à l'Étranger* (AEFE), France.
 - 2013 French Baccalauréat (scientific stream) and German Abitur, highest honors, *Lycée français*, Berlin, Germany.
 - 2012 German Student-Academy scholarship (course in neurolinguistics and cognitive science), *Stiftung Bildung & Begabung*, Rostock, Germany.

Publications

- 2022 I. Mayer, P. Zhao, N. Greifer, N. Huntington-Klein, J. Josse. CRAN task view: Causal inference, *Comprehensive R Archive Network*.
- 2022 J. Josse, I. Mayer, N. Tierney, N. Vialaneix. CRAN task view: Missing data, Comprehensive R Archive Network, https://CRAN.R-project.org/view=MissingData.
- 2021 I. Mayer, J.-D. Moyer, A. Dreyfus, M. Boutonnet, P.-J. Cungi, A. Fourcrier, A. Harrois, A. James, J.-P. Nadal, J. Josse, T. Gauss. Machine Learning Augmented Causal Inference To Estimate The Treatment Effect of Tranexamic Acid In Traumatic Brain Injury, submitted, https://www.researchsquare.com/article/rs-600886/latest.pdf.
- 2021 I. Mayer, J. Josse, Traumabase Group. Generalizing treatment effects with incomplete covariates: identifying assumptions and multiple imputation algorithms, *submitted*, https://arxiv.org/pdf/2104.12639.pdf.
- 2020 B. Colnet, I. Mayer, G. Chen, A. Dieng, R. Li, G. Varoquaux, J.-P. Vert, J. Josse, S. Yang. Causal inference methods for combining randomized trials and observational studies: a review, *under revision*, https://arxiv.org/pdf/2011.08047.pdf.
- E. Sbidian, J. Josse, G. Lemaitre, I. Mayer, M. Bernaux, A. Gramfort, N. Lapidus, N. Paris, A. Neuraz, I. L., N. Garcelon, B. Rance, O. Grisel, T. Moreau, A. Bellamine, P. Wolkenstein, G. Varoquaux, E. Caumes, M. Lavielle, A. Mekontso Dessap, E. Audureau Hydroxychloro-quine with or without azithromycin and in-hospital mortality or discharge in patients hospitalized for COVID-19 infection: a cohort study of 4,642 in-patients in France, submitted, https://www.medrxiv.org/content/medrxiv/early/2020/06/19/2020.06.16.20132597.full.pdf.

- 2020 I. Mayer, E. Sverdrup, T. Gauss, J.-D. Moyer, S. Wager, and J. Josse. Doubly robust treatment effect estimation with missing attributes, Annals of Applied Statistics, https://projecteuclid.org/euclid.aoas/1600454872.
- 2020 I. Mayer, J. Josse, F. Raimundo and J.-P. Vert. MissDeepCausal: causal inference from incomplete confounders using deep latent variable models, *Technical Report*.
- 2019 I. Mayer, J. Josse, N. Vialaneix, N. Tierney. R-miss-tastic: a unified platform for missing values methods and workflows, To appear in R Journal, https://arxiv.org/ abs/1908.04822.

Oral and poster communications

- Dec. 2022 International Conference on Statistics and Data Science (invited talk), Institute of Mathematical Statistics, Florence, Italy.
- Dec. 2022 CMStatistics (invited talk), King's College, London, England.
- July 2022 International Biometric Conference (talk), International Biometric Society, Riga, Latvia.
- June 2022 Annual IMS Meeting (talk), Institute of Mathematical Statistics, London, England.
- Sept. 2021 Convention of the French Society of Anesthesia & Intensive Care Medecine (talk), Palais des Congrès, Paris, France.
- Aug. 2021 Joint Statistical Meetings (invited talk), Topic Contribution Session, Seattle, WA, USA.
- July 2021 European Causal Inference Meeting (talk), London School of Economics, London, England.
- June 2021 Working Group on Risk (invited talk), ESSEC Business School, Paris, France.
- Jan. 2021 Séminaire Systèmes complexes (invited talk), EHESS, Paris, France.
- Sep. 2020 European Network for Business and Industrial Statistics (invited talk, cancelled due to COVID-19), Technical University of València, València, Spain.
- May 2020 American Causal Inference Conference (talk, postponed to 2021 due to COVID-19), University of Texas, Austin, TX, USA.
- Jan. 2020 Young Statisticians and Probabilists (invited talk), Institut Henri Poincaré, Paris, France.
- Jan. 2020 MaiAGE seminar (invited talk), INRA, Jouy-en-Josas, France.
- Jan. 2020 Séminaire Palaisien (invited talk), ENSAE, DATAIA, Palaiseau, France.
- Dec. 2019 NeurIPS workshop on Causality and Machine Learning (poster), Advances in Neural Information Processing Systems 32, Vancouver, Canada.
- Dec. 2019 Econometrics and Big Data seminar (invited talk), Aix-Marseille University, Marseille, France.
- Sept. 2019 Statistique, mathématiques et applications (talk), Fréjus, France.
- June 2019 51èmes Journées de Statistique (talk), Université de Lorraine, Nancy, France.
- June 2019 Séminaire Systèmes complexes (invited talk), EHESS, Paris, France.
- May 2019 Data science seminar for MDs in critical care management (talk), *Traumabase Group*, Paris, France.
- March 2019 European Causal Inference Meeting (poster), Leibniz Institute, Bremen, Germany.
- March 2019 DAGStat Conference (poster), LMU München, Munich, Germany.

Software development

Website CRAN Task View on Causal Inference, under review, with Pan Zhao.

- Website **R-miss-tastic: a unified platform on missing values methods**, *funded by the R Consortium*.
- R package misaem, Maintenance taken over from original author Wei Jiang.

Scientific commitment

- June 2021 **Organization committee member and Session Chair**, *Workshop Leveraging Observational Data using Machine Learning*, Inria, Inserm, Owkin.
- 2020–Present **Member of the Editorial Board of the** *YoungStatS* research blog, *Young Statisticians* of Europe.
- 2020–Present **Referee**, International Conference on Learning Representations (ICLR, highlighted reviewer), Biometrical Journal, Annals of Intensive Care, Journal of the Royal Statistical Society.
- 2020–Present **Secretary of the Groupe Jeunes of the SFdS (French Statistical Society)**, (responsibilities: organization of satellite events at the JdS, construction of European Young Statisticians network).
 - 2019–2021 Organizer of the Young Statisticians and Probabilists colloquium, SFdS.

Languages and programming skills

German	Native	R	Advanced
English	Perfectly proficient	Python	Intermediate
French	Perfectly proficient	C++	Intermediate
Korean	Elementary	SQL, matlab	Basics

Associative commitment and interests

- 2019–2021 **Elected member of the parity and diversity committee**, *CMAP, École Polytechnique*, Palaiseau, France.
- 2018–Present Member of R Foundation *Forwards* taskforce on women and other underrepresented groups, (responsibilities: diversity scholarship coordination).
 - Hobbies I was born and grew up in Berlin and have been living mostly in France since 2013. I like to travel to different countries, because new foreign cultures and languages fascinate me. Curious and committed I meet all ventures and new challenges. In my free time I read a lot, do various sports (running, swimming, yoga, hiking and Korean folk dance) and frequently attend theatre plays.