Janick Weberpals

Health Data Scientist

30 April 1989, Bruchsal, Germany

German citizenship

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About Me

I'm a pharmacist & data scientist with 8+ years of experience in the design and analysis of large real-world clinical database studies in both industry and academia. I'm passionate about integrating various data modalities (EHR, claims, genomics, pathology, imaging) using machine learning and advanced analytics to solve problems in healthcare and causal inference. I have additionally gained deep clinical expertise in the field of oncology and other disease areas, (co-) authored 25+ peer-reviewed methodological and clinical publications and was recognized with several awards resulting from this work.

Hard Skills

- R, RStudio, tidyverse, devtools
- Python, Tensorflow, Keras
- git, GitHub, GitLab, version control
- dbplyr, SQL, Data management
- HPC, SLURM, Unix, AWS
- Quarto, Markdown, LaTeX
- Medical coding standards & common data models (ICD, NDC, ATC, LOINC, CPT-4, HCPCS, OMOP, ...)

Education

2018 – 2020 **Postdoctoral Fellowship** Data Science, Roche Innovation Center, Germany
Deep learning on electronic health record (EHR) data

2015 – 2018 **Ph.D. Epidemiology** Medical Faculty, Heidelberg University, Germany
Graduated with Summa cum laude honors

2015 – 2018 **Board certification** Bavarian Chamber of Pharmacists, Munich, Germany
Specialized Pharmacist in Drug Information

2010 – 2015 **Registered Pharmacist** College of Pharmacy, Marburg University, Germany
Pharmaceutical Sciences

Professional Experience

2022– **Instructor in Medicine** Harvard Medical School, Boston, MA, USA
Division of Pharmacoepidemiology & Pharmacoeconomics

- Attracted > $1 Mio. in research funding as (co-) principal investigator from the US FDA to develop a systematic approach to missing data in causal inference and real-world evidence (RWE) studies. Project resulted in implementable *smdi* *R package* as deliverable.
- Established transparent and reproducible programming workflows within the division including shifting from SAS to R programming and CI/CD of analytical code via GitLab repositories
- Leading innovative projects utilizing advanced analytics to leverage routinely collected healthcare data (EHR, imaging , claims) to improve validity and deliver high-quality RWE studies.

2020–2022 **Data Scientist** Hoffmann-La Roche, Basel, Switzerland
PHC Data Analytics & Imaging (2021-22), RWD Collaborations (2020-21)

- Scientific lead and contributor to several work streams aiming to link, integrate and evaluate multimodal data (imaging , claims, NLP) with EHR databases to expedite and support late-stage oncology drug development using RWD. Parts of this work were recognized by the Roche/Genentech senior management with the product development innovation breakthrough award.
- Was awarded "Exceptional Performance" in 2021.
- Planned, executed and published RWE studies in collaboration with Foundation Medicine and academic key opinion leaders to support the personalized healthcare integrated evidence generation program with focus on genetic testing in cancer populations .
- Led a strategic cross-functional data partnership due diligence effort which saved the organization ~ $300k in avoidable spendings.
- Scientific lead of collaboration with second largest HMO in Israel which contextualized COVID-19 infection and vaccination patterns among multiple sclerosis patients with ocrelizumab exposure .
- Served as RWD expert in a multidisciplinary study management team for *Wayfind-R* , an international cancer registry enrolling patients who underwent next generation sequencing (NGS) testing (NCT04529122) enabling large-scale tumor agnostic studies .

2018-2020 **Postdoctoral Fellow Data Science** Roche, Munich, Germany
Research and Early Development (pRED) Data Science

- Developed a deep learning-based propensity score algorithm to improve validity of RWE studies.
- Contributed to the development of a pan-tumor prognostic score for overall survival as a decision-support tool for trial eligibility and patient enrichment in early-phase oncology trials.
- Contributed to RWD efforts (e.g., development of external control arms) to contextualize and support business-critical go/no-go decision-making for clinical phase I molecule development.
- Attracted ~ 135k EUR of internal research funding to advance AI in RWD & drug development and grow the team with M.Sc. & Ph.D. students in collaboration with national universities .

Soft Skills

- Agile & hands-on
- Creative
- Organized
- Collaborative
- Versatile
- Exchange & sharing
- Pragmatic

Languages

German ●●●●●

English ●●●●●

Memberships

International Society for Pharmacoepidemiology (ISPE)

German Pharmaceutical Society (DPhG)

German Society for Epidemiology (DGEpi)

Professional Experience *(continued)*

2015-2018 **Doctoral Researcher** German Cancer Research Center, Heidelberg, Germany
Division of Clinical Epidemiology and Aging Research

- Managed, QC'ed and analyzed large oncological database linkages with a focus on drug repurposing.
- Partnered with (inter)national cancer registries which resulted in 14 peer-reviewed publications impacting *public cancer survival surveillance*.

2014-2015 **Research Scholar** University of Florida, Gainesville, FL, USA
Department of Pharmaceutical Outcomes and Policy

Contributed to a multidisciplinary project to develop an EHR-based *predictive risk model* to prevent adverse events among hospitalized patients. The model was implemented in select US hospitals.

Talks & Outreach (selected, full list: *janickweberpals.github.io/talks*)

Issues and Solutions When Estimating Treatment Effects Using US Electronic Health Record Data. (invited panelist). **International Society for Health Economics and Outcomes Research (ISPOR) Annual Meeting**, Boston, MA, 2023.

Characterizing Missing Data Processes in Electronic Health Record Data. **FDA All-Center Leadership Meeting (FDA Sentinel Initiative).** Virtual presentation, 2023.

Publications (selected, full list: *janickweberpals.github.io/publications*)

Weberpals J, Becker T, Schmich F, Ruettinger D, Theis FJ, Bauer-Mehren A. Deep learning-based propensity scores for confounding control in comparative effectiveness research: a large-scale real-world data study. **Epidemiology** (2021).

Loureiro H, Becker T, Bauer-Mehren A, Ahmidi N, Weberpals J. Artificial Intelligence for Prognostic Scores in Oncology: a benchmarking study. **Frontiers in Artificial Intelligence** (2021).

Software Development

smdi - An R package to perform routine structural missing data investigations

autoencoderPS - An autoencoder-based propensity score

Awards (selected, full list: *janickweberpals.github.io/awards*)

2018	Stephan-Weiland Award 1st prize	German Society for Epidemiology
2018	Advancement Award for best Ph.D. thesis in Epidemiology	GMDS
2017	Poster Award	Helmholtz International Graduate School
2016 & 2017	Travel Scholarships	International Society for Pharmacoepidemiology

Other Activities

2019–2021 Adjunct lecturer (Medical Faculty, University of Heidelberg, Germany), Conceptualization and teaching of an introductory course on design and biases of pharmacoepidemiological studies for Biostatistics/Medical Biometry M.Sc. students

2020 – Core member, Real World Evidence Task Force - Statistical Methods, International Society for Pharmacoepidemiology

Patents

PROPENSITY SCORE BASED ASSESSMENT OF PATIENT DATA. International Patent Application Number PCT/EP2020/064 134, filed 20 May 2020, Patent Pending. Publication WO2020234388A1