Char Hilgers

German Institute for Economic Research (DIW Berlin)
Socio-Economic Panel
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POSITIONS

Doctoral Candidate   January 2024 - present
Survey Methodology, Socio-Economic Panel
German Institute for Economic Research (DIW Berlin), Berlin, Germany
- Developing new statistical methods for multiple imputation of missing survey responses using external data
- Literature review of statistical methods for informative censoring

Data Scientist   May 2021 - October 2023
International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests)
Thünen Institute of Forest Ecosystems, Eberswalde, Germany
- Tidied and gap filled time series data sets in Meteorology and Deposition surveys in preparation for a forthcoming book in the Springer Ecological Studies series
- Literature review of best statistical methods for gap filling
- Produced maps, graphs, an R Shiny app and other visualisations
- Presented status and results at regular official meetings of ICP Forests and at an international conference and a summer school
- Co-authored United Nations reports, papers and book chapters

Data Scientist   April 2018 - April 2021
Lidl Digital, Berlin, Germany
- Designed, implemented, and maintained solutions for a wide range of data science, data management, and statistical topics in Supply Chain Management, Procurement, Assortment, Marketing and Pricing departments
- Trained data science, business intelligence, and accounting colleagues on ethics for data practitioners
- Worked as part of a team called AI Lab, meeting directly with internal clients and management to ascertain business needs
- Prototyped Shiny dashboards to support decision-making on marketing actions, price changes, and stock monitoring

Statistician   August 2016 - August 2017
Integrative Analysis of Longitudinal Studies of Aging and Dementia (IALSA)
Eindhoven, the Netherlands
- Researched epidemiological data harmonization with a literature review of methods

Data Science Intern   April - August 2016
MarketRedesign, Eindhoven, the Netherlands
- Analyzed large data sets collected by web-based pricing software
- Applied machine learning algorithms in R to find patterns in data with decision trees, support vector machines, k-nearest neighbours

Research Assistant   January 2014 - July 2015
Maelstrom Research, Montreal, Canada
- Collaborated on epidemiological research in the field of data harmonization
- Prepared data and assessed inferential equivalence of data from multiple studies using database management software Opal, Excel, and JavaScript
- Documented cohort datasets for searchable study question database

EDUCATION   *Master of Science in Industrial and Applied Mathematics*   Graduated 2017
Technical University of Eindhoven, Eindhoven, the Netherlands
- Stochastics, Probability, and Operations Research focus
- Two-year program emphasized working with big data
- Thesis: *Harmonization of Binomially Distributed Variables in Individual Participant Data Meta-Analysis*
- Generated synthetic data sets, introduced missingness, and then compared two methods for multiple imputation: joint modeling vs. conditional specification

Bachelor of Science in Pure Mathematics   Graduated 2014
McGill University, Montreal, Canada
- Courses taken in Probability, Statistics, Advanced Calculus, Algebra, Analysis, Ordinary/Partial Differential Equations, Nonlinear Dynamics, Game Theory, Finance, Economics and Econometrics, Computer Programming, Philosophy

PUBLICATIONS Verstraeten, A., Marchetto, A., Schmitz, A., Clarke, N., Thimonier, A., Hilgers, C., ... & Waldner, P. (2024). Trends of total inorganic nitrogen deposition and potential acidity in European forests. Report, Research Institute Nature and Forest, Belgium.

Ferretti, M., Vesterdal, L., Schaub, M., Canullo, R., Cools, N., De Vos, B., ... & Zimmermann, L. (2023). Forest condition and environmental drivers in Europe: Recent evidence from selected studies. In Forest Condition in Europe: The 2023 Assessment: ICP Forests Technical Report under the UNECE Convention on Long-range Transboundary Air Pollution (Air Convention) (pp. 11-17). Thünen Institute. `http://dx.doi.org/10.3220/ICPTR1697801881000`

Marchetto, A., Hilgers, C., Kirchner, T., Michel, A., Schmitz, A., Verstraeten, A., Waldner, P. (2023). Atmospheric deposition in European forests in 2021. In Forest Condition in Europe: The 2023 Assessment: ICP Forests Technical Report under the UNECE Convention on Long-range Transboundary Air Pollution (Air Convention) (pp. 24-32). Thünen Institute. `http://dx.doi.org/10.3220/ICPTR1697801881000`

Zimmermann, L., Raspe, S., Hilgers, C., Schwärzel, K., Michel, A. (2023). Meteorological conditions in European forests in 2021. In Forest Condition in Europe: The 2023 Assessment: ICP Forests Technical Report under the UNECE Convention on Long-range Transboundary Air Pollution (Air Convention) (pp. 33-41). Thünen Institute. `http://dx.doi.org/10.3220/ICPTR1697801881000`

Timmermann, V., Potočić, N., Ognjenović, M., Kirchner, T., Hilgers, C. (2023). Tree crown condition in 2022. In Forest Condition in Europe: The 2023 Assessment: ICP Forests Technical Report under the UNECE Convention on Long-range Transboundary Air Pollution (Air Convention) (pp. 42-56). Thünen Institute. `http://dx.doi.org/10.3220/ICPTR1697801881000`

Waldner, P., Kirchner, T., Hilgers, C., Verstraeten, A., Schmitz, A., Marchetto, A., ... & Zolles, A. (2023). Longterm trends in atmospheric bulk and throughfall deposition of sulfur and nitrogen to forests in Central Europe. Report, 21st Swiss Geoscience Meeting.

TALKS

Contributed talk, International Statistical Institute World Statistics Congress 2025 in The Hague, Netherlands, October 2025: Hilgers, C., Zinn, S. (2025). Filling in the Blanks: Augmenting Survey Data Imputation with External Data and Rubin's SIR Algorithm.

Invited talk, European Survey Research Association 2025 Conference in Utrecht, Netherlands, July 2025: Hilgers, C., Zinn, S. (2025). Filling in the Blanks: Augmenting Survey Data Imputation with External Data and Rubin's SIR Algorithm.

Invited talk, ACID RAIN 2020 Conference in Niigata, Japan, in-person, April 2023: Prescher, A. K., Schwärzel, K., Hilgers, C., Michel, A., Nussbaumer, A., Krüger, I., ... & Waldner, P. (2023). Sulphur dynamics in forest ecosystems following the reduction of sulphur deposition.

Poster, ForBioDiv Summer School, Davos, Switzerland, in-person, September 2022: Hilgers, C. (2022). Gap filling drivers of biodiversity.

SKILLS

Remarkably organized
Expert in R, SQL, R Shiny, Git, PowerPoint, Excel
Comfortable in Python, VBA, Linux, LaTeX
English first language, intermediate German (B1), fluent Portuguese, advanced French