David Kohns

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Positions

2022 – … **Postdoc,** Computer Science, Aalto University.
Supervising 3 Ph.D.s, 1 M.Sc. student

2021 – 2022 **Ph.D. Research Intern,** Current Economic Conditions, Bank of England

2018 – 2022 **Research Assistant,** Biofuels Lead, BP

Education

2018 – 2022 **Ph.D. Economics, Heriot-Watt University**. Nominee for MacFarlane Prize. Voted Best Social Science Thesis.
Thesis title: *High-dimensional Bayesian methods for interpretable norecasting and risk estimation.*

2017 – 2018 **M.Sc. Economics (Econometrics), University of Edinburgh** with Distinction.
Dissertation title: *Interpreting big data in the macro economy: A Bayesian mixed frequency estimator.*

2013 – 2017 **B.Sc. Economics and Business Economics, Maastricht University** in Econometrics. Cum Laude.
Dissertation title: *Debt Relief and its Effect on Growth.*

Teaching

2022 – … **Bayesian Data Analysis,** Head TA, M.Sc., Aalto University

2020 – 2022 **Econometrics 2 (Time-Series),** M.Sc., University of Edinburgh

2020 – 2021 **Introduction to Econometrics,** B.Sc., Heriot-Watt University

2019 – 2020 **The Economy,** B.Sc., Heriot-Watt University

2019 **Introduction to Mathematics, Statistics and Econometrics,** M.Sc., University of Edinburgh

Research Publications

Journal Articles

1. **Kohns**, **D.**, & Szendrei, T. (2023). Horseshoe prior Bayesian quantile regression. *Journal of the Royal Statistical Society Series C: Applied Statistics*, qlad091. https://doi.org/10.1093/jrsssc/qlad091
2. **Kohns**, **D.**, & Bhattacharjee, A. (2023). Nowcasting growth using google trends data: A bayesian structural time series model. *International Journal of Forecasting*, *39*(3), 1384–1412.
3. Ahrens, A., Aitken, C., Ditzen, J., Ersoy, E., **Kohns**, **D.**, & Schaffer, M. E. (2021). A theory-based lasso for time-series data. *Data Science for Financial Econometrics*, 3–36.

Working Papers

1. Aguilar, J., **Kohns**, **D.**, Burkner, P., & Vehtari, A. (2023). *The Group-R2 prior for block-correlated predictors.*
2. Cooper, A., **Kohns**, **D.**, Kallionen, N., & Vehtari, A. (2023). *Bayesian predictive model comparison for multivariate time-series models.*

3. **Kohns**, **D.**, McLatchie, Y., Kallionen, N., & Vehtari, A. (2023). *The AR-R2 prior: A new shrinkage prior for general time-series dynamics*.
4. **Kohns**, **D.**, & Potjagailo, G. (2023). *Flexible bayesian midas: Time-variation, group-shrinkage and sparsity* [**R&R at JBES**].
5. Lindgren, L., Vehtari, A., & **Kohns**, **D.** (2023). *To select or not to select*.
6. McLatchie, Y., Matamoros, A. A., **Kohns**, **D.**, & Vehtari, A. (2022). *Bayesian order identification of arma models with projection predictive inference* [Submitted].
7. **Kohns**, **D.**, & Szendrei, T. (2021). *Decoupling shrinkage and selection for the bayesian quantile regression* [Submitted].

Skills

Languages — German and English (mother-tongues). Learning Estonian

Coding — MATLAB, R, Stan, Stata, some Python, LaTeX.

Misc. — Tennis, reading, skiing, hiking.

Research Training

2023 **Intro to Peda, Aalto University**.
Pedagocial course for teachers

2021 **Nowcasting & Models for Mixed Frequency Data, IJF Workshop**.
4 day Ph.D. course

2020 **High Dimensional State Spaces, Gerzensee Institute**.
5 day advanced Ph.D. course

2020 **Probabilistic Data Analysis, University of Turku**.
4 month advanced Ph.D. course

Advanced Bayesian Econometrics, Università Ca' Foscari .
5 day advanced Ph.D. course

Miscellaneous Experience

Scholarships and Grants

2018-2022 **Heriot-Watt University Ph.D. Grant**, Full stipend for Ph.D. studies.

2018 **Edinburgh University full Scholarship M.Sc.**, University of Edinburgh.

Referee Activity

International Journal of Forecasting, Scottish Journal of Political Economy, Spatial Economic Analysis, Electronic Journal of Statistics, Statistica Sinica.

Supervising Students

- Noa Kallionen (Ph.D.)
- Leevi Lindgren (Ph.D.)
- Javier Aguilar (Ph.D.)
- Yann McLatchie (M.Sc)

Research Interests

Bayesian Econometrics, Macroeconomics, Time-Series, Bayesian Workflow, High-Dimensional Statistics, Non-Parametric Methods