David Kohns

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Positions

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

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,** Course Manager, M.Sc., Aalto University

2024 – … **Special Course in Machine Learning and Data Science: Bayesian Workflows** Co-Organiser, 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.**, Kallioinen, N., McLatchie, Y., & Vehtari, A. (2025). The arr2 prior: Flexible predictive prior definition for bayesian auto-regressions. *Bayesian Analysis*, *1*(1), 1–32.
2. **Kohns, D.**, & Potjagailo, G. (2025). Flexible bayesian midas: Time-variation, group-shrinkage and sparsity. *Journal of Business & Economic Statistics*, (just-accepted), 1–28.
3. **Kohns, D.**, & Szendrei, T. (2023a). Horseshoe prior Bayesian quantile regression. *Journal of the Royal Statistical Society Series C: Applied Statistics*, qlad091. https://doi.org/10.1093/jrsssc/qlad091
4. **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.
5. 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. (2024). *The Group-R2 prior for block-correlated predictors*.
2. **Kohns, D.**, & Szendrei, T. (2024). *Qunatile-varying parameters: A new approach to joint-modeling of bayesian quantile regression*.
3. Riha, A., Vehtari, A., & **Kohns, D.** (2024). *To select or not to select*.
4. Cooper, A., **Kohns, D.**, Kallionen, N., & Vehtari, A. (2023). *Bayesian predictive model comparison for multivariate time-series models*.
5. **Kohns, D.**, & Szendrei, T. (2023b). *Decoupling shrinkage and selection for the bayesian quantile regression* [**R&R at JRSSC**].

Skills

Languages	German and English (mother-tongues), Estonian (A1)
Coding	MATLAB, R, Stan, Python, Shell scripting, Snakemake, Git, LaTeX.

Research Training

2024	**Gaussian Processes, Aalto University**. *5 ECTS M.Sc. course using Python*
2023	**Intro to Peda, Aalto University**. *5 ECTS Pedagocial course for teachers*
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, Bayesian Analysis, Applied Econometrics.

Supervising Students

- Noa Kallionen (Ph.D.)
- Anna Riha (Ph.D.)
- Herman Tesso (Ph.D.)

Research Interests

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