

Patrick Altmeier

Dusseldorf, Germany

✉ patalt@patalt.org ☎ [pat-alt](tel:0000-0003-4726-8613) ⓕ 0000-0003-4726-8613 🌐 patalt.org

Employment

BANK OF ENGLAND

Economist (London, UK)

2018-2020

Postgraduate Intern (London, UK)

06/2017-08/2017

UNIVERSITY OF EDINBURGH

Teaching Assistant (part-time) (Edinburgh, UK)

2016-2017

Education

DELFT UNIVERSITY OF TECHNOLOGY

Ph.D. Computer Science

2021-2026

Published first-author papers on Counterfactual Explanations, Predictive Uncertainty Quantification and Mechanistic Interpretability at top-tier venues: ICML, AAAI, IEEE SaTML.

Supervised bachelor's and master's theses that led to several publications as well as student software projects on related research topics.

Frequently invited as speaker at organizations including The Alan Turing Institute, The Bank of England, De Nederlandsche Bank, Verbond van Verzekeraars.

Founded and maintained Taija, an open-source software organization for Trustworthy Artificial Intelligence in Julia. Presented at JuliaCon Global for three consecutive years.

Mentored first-time open-source contributors as part of Google Summer of Code and Julia Season of Contributions.

BARCELONA SCHOOL OF ECONOMICS (BSE)

Master Degree in Data Science, GPA 8.67/10

2020-2021

Dissertation: Deep Vector Autoregression for Macroeconomic Data (9.5)

Relevant modules: Machine Learning (9.0), Reinforcement Learning (10.0)

Master Degree in Economics and Finance, GPA 9.03/10 (top student)

2017-2018

Dissertation: Option Pricing in the Heston Stochastic Volatility Model (10.0)

Relevant modules: Financial Econometrics (10.0), Pricing Financial Derivatives (9.3)

THE UNIVERSITY OF EDINBURGH

Master of Arts with Honours in Economics, First Class (among top three students)

2013-2017

Dissertation: Can misguided monetary policy explain the European housing bubble? (82%)

Honours modules: Economics of Financial Markets (86%), Adv. Mathematical Economics (79%), Behavioural Economics (71%), Economics of Asymmetric Information (74%)

Publications

Altmeyer, P., Buszydlik, A., Deursen, A. van, & Liem, C. C. S. (2026). Counterfactual training: Teaching models plausible and actionable explanations. *2026 IEEE Conference on Secure and Trustworthy Machine Learning (SaTML)*. [upcoming](#)

- Buszydlik, A., Altmeyer, P., Liem, C. C. S., & Dobbe, R. (2025). Understanding the affordances and constraints of explainable AI in safety-critical contexts: A case study in dutch social welfare. *Electronic Government. EGOV 2025. Lecture Notes in Computer Science*. https://link.springer.com/chapter/10.1007/978-3-032-02515-9_8
- Dobiczek, K., Altmeyer, P., & Liem, C. C. (2025). Natural language counterfactual explanations in financial text classification: A comparison of generators and evaluation metrics. *Proceedings of the Fourth Workshop on Generation, Evaluation and Metrics (GEM²)*, 958–972. <https://aclanthology.org/2025.gem-1.75.pdf>
- Altmeyer, P., Demetriou, A. M., Bartlett, A., & Liem, C. C. (2024). Position: Stop making unscientific AGI performance claims. *International Conference on Machine Learning*, 1222–1242. <https://proceedings.mlr.press/v235/altmeyer24a.html>
- Altmeyer, P., Farmanbar, M., Deursen, A. van, & Liem, C. C. S. (2024). Faithful Model Explanations through Energy-Constrained Conformal Counterfactuals. *Proceedings of the Thirty-Eighth AAAI Conference on Artificial Intelligence*, 38, 10829–10837. <https://doi.org/10.1609/aaai.v38i10.28956>
- Hengst, F., Wolter, R., Altmeyer, P., & Kaygan, A. (2024). Conformal intent classification and clarification for fast and accurate intent recognition. *Findings of the Association for Computational Linguistics: NAACL 2024*, 2412–2432. <https://doi.org/10.18653/v1/2024.findings-naacl.156>
- Agustí, M., Costa, I. V.-Q., & Altmeyer, P. (2023). Deep vector autoregression for macroeconomic data. *IFC Bulletins Chapters*, 59. https://www.bis.org/ifc/publ/ifcb59_39.pdf
- Altmeyer, P., Angela, G., Buszydlik, A., Dobiczek, K., Deursen, A. van, & Liem, C. C. (2023). Endogenous macrodynamics in algorithmic recourse. *2023 IEEE Conference on Secure and Trustworthy Machine Learning (SaTML)*, 418–431. <https://doi.org/10.1109/satml54575.2023.00036>
- Altmeyer, P., Deursen, A. van, & Liem, C. C. S. (2023). Explaining Black-Box Models through Counterfactuals. *Proceedings of the JuliaCon Conferences*, 1, 130. <https://doi.org/10.21105/jcon.00130>

Preprints

Buszydlik, A., Altmeyer, P., Liem, C. C., & Dobbe, R. (2024). *Grounding and validation of algorithmic recourse in real-world contexts: A systematized literature review*. <https://openreview.net/pdf?id=oEmyoy5H5P>

Supervision

MASTER'S STUDENTS

- Buszydlik, A. (2024). *Finding recourse for algorithmic recourse* [Master's thesis, Delft University of Technology]. <https://resolver.tudelft.nl/uuid:be47ad5a-5a4b-457c-b214-35c6c78cae36>
- Dobiczek, K. (2024). *Natural language counterfactual explanations in financial text classification* [Master's thesis, Delft University of Technology]. <https://resolver.tudelft.nl/uuid:66730110-d296-4a57-b382-e9a6cc0a4aa5>
- Radder, M. E. (2024). *A counterfactual-based evaluation framework for machine learning models that use gene expression data* [Master's thesis, Delft University of Technology]. <https://resolver.tudelft.nl/uuid:4cf92f8f-2a4c-43e8-9746-2ff33ca65de5>
- Zagorac, I. (2024). *A study on counterfactual explanations* [Master's thesis, Delft University of Technology]. <https://resolver.tudelft.nl/uuid:6e2c240c-03c6-4e0e-af2c-5d257e77c77c>

BACHELOR'S STUDENTS

- Appachi Senthilkumar, R. (2024). *Are neural networks robust to gradient-based adversaries also more explainable? Evidence from counterfactuals*. Delft University of Technology. <https://resolver.tudelft.nl/uuid:47786bb4-ae24-4972-94a0-1bd18d756486>
- Iscan, I. (2024). *Advancing explainability in black-box models*. Delft University of Technology. <https://resolver.tudelft.nl/uuid:e50c1cae-d579-405a-9089-86a0ca925086>
- Nikolov, D. (2024). *How does predictive uncertainty quantification correlate with the plausibility of counterfactual explanations*. Delft University of Technology. <https://resolver.tudelft.nl/uuid:b0ecc3fe-4454-4c44-a624-5d335d108634>
- Pezzali, G. (2024). *Do joint energy-based models produce more plausible counterfactual explanations?* Delft University of Technology. <https://resolver.tudelft.nl/uuid:afe2d50d-f4b3-403f-b0e7-a0b8ede96bb0>
- Yücel, A. F. (2024). *Metrics to ascertain the plausibility and faithfulness of counterfactual explanations*. Delft University of Technology. <https://resolver.tudelft.nl/uuid:d80b688c-b0f6-4c88-a0a2-891d738f25d4>
- Angela, G. (2023). *Endogenous macrodynamics in algorithmic recourse*. <https://resolver.tudelft.nl/uuid:5023154a-53c6-44c-a-9d09-1670ba0ded31>

- Buszydlik, A. (2022). *Quantifying the endogenous domain and model shifts induced by the DiCE generator*. Delft University of Technology. <https://resolver.tudelft.nl/uuid:cb0bf4ac-4055-489b-b768-e5b53ec6fa47>
- Dobiczek, K. (2022). *Quantifying the endogenous domain and model shifts induced by the CLUE recourse generator*. Delft University of Technology. <https://resolver.tudelft.nl/uuid:6a249d72-9e1e-4e81-abdc-463260c7d1bc>

SOFTWARE PROJECTS

- Luiz Franco, J. (2024). *JSoC: When Causality Meets Recourse*. <https://www.taija.org/blog/posts/causal-recourse/>
- Caterino, P. (2024). *Google summer of code 2024 final report: Add support for conformalized bayes to ConformalPrediction.jl*. <https://gist.github.com/pasq-cat/f25eebc492366fb6a4f428426f93f45f>

Software

- Altmeyer, P., & contributors. (2025). *CounterfactualExplanations.jl* (Version v1.4.5). <https://doi.org/10.5281/zenodo.8239378>
- Altmeyer, P., & contributors. (2024). *ConformalPrediction.jl* (Version v0.1.13). <https://doi.org/10.5281/zenodo.12799930>
- Altmeyer, P., & contributors. (2024). *LaplaceRedux.jl* (Version v1.2.0). <https://doi.org/10.5281/zenodo.13758044>

Skills

Languages: German (native), English (fluent), Spanish (intermediate), Dutch (intermediate)

Programming: Julia (Flux, MLJ, Zygote, ...), R, Python (PyTorch, TensorFlow, ...), git, bash, Quarto, LaTeX, neovim

Selected Awards & Honours

Awarded Google Summer of Code and Julia Season of Contributions grants. (2024)

1st Prize Winner of ING Experiment Week. (2023)

2nd Prize Winner of JuliaCon Pluto Notebook Competition. (2023)

3rd Price Winner of Novartis Datathon. (2020)

Full-Tuition Scholarship awarded jointly by Bank of England and BSE. (2020)

Full-Tuition Scholarship awarded BSE. (2017)

School of Economics Joint Prize for the best performance in Economics. (2017)

School of Economics Prize for academic excellence in Economics. (2014)

References

Available upon request.