

# Patrick Altmeyer

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## 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*

2021-2025

Published research on Counterfactual Explanations, Predictive Uncertainty Quantification and Mechanistic Interpretability in top-tier venues: ICML, AAAI, IEEE SaTML.

Supervised multiple bachelor's and master's theses as well as 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's 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's 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., 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](https://www.bis.org/ifc/publ/ifcb59_39.pdf)
- Altmeyer, P., Angela, G., Buszydlík, 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>

## Technical Reports

- Altmeyer, P., Boneva, L., Kinston, R., Saha, S., & Stoja, E. (2023). *Yield curve sensitivity to investor positioning around economic shocks* (Bank of England Working Papers No. 1029). Bank of England. <https://doi.org/None>
- Altmeyer, P., Grapendal, J. D., Pravosud, M., & Quintana, G. D. (2018). *Option pricing in the beston stochastic volatility model: An empirical evaluation* [Master's thesis]. <http://hdl.handle.net/10230/35862>
- Altmeyer, P. (2017). *Can misguided monetary policy explain the european housing bubble?* <https://thevoice.bse.eu/wp-content/uploads/2017/09/can-misguided-monetary-policy-explain-the-european-housing-bubble-patrick-altmeyer.pdf>

## Preprints

- Buszydlík, 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

- Buszydlík, A. (2024). *Finding recourse for algorithmic recourse*. <https://resolver.tudelft.nl/uuid:be47ad5a-5a4b-457c-b214-35c6c78cae36>
- Dobiczek, K. (2024). *Natural language counterfactual explanations in financial text classification*. <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*. <https://resolver.tudelft.nl/uuid:4cf92f8f-2a4c-43e8-9746-2ff33ca65de5>
- Zagorac, I. (2024). *A study on counterfactual explanations*. <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*. <https://resolver.tudelft.nl/uuid:47786bb4-ae24-4972-94a0-1bd18d756486>
- Iscan, I. (2024). *Advancing explainability in black-box models*. <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*. <https://resolver.tudelft.nl/uuid:b0ecc3fe-4454-4c44-a624-5d335d108634>
- Pezzali, G. (2024). *Do joint energy-based models produce more plausible counterfactual explanations?* <https://resolver.tudelft.nl/uuid:afe2d50d-f4b3-403f-b0e7-a0b8ede96bb0>
- Yücel, A. F. (2024). *Metrics to ascertain the plausibility and faithfulness of counterfactual explanations*. <https://resolver.tudelft.nl/uuid:d80b688c-b0f6-4c88-a0a2-891d738f25d4>
- Angela, G. (2023). *Endogenous macrodynamics in algorithmic recourse*. <https://resolver.tudelft.nl/uuid:5023154a-53c6-44ca-9d09-1670ba0ded31>

Buszydlík, A. (2022). *Quantifying the endogenous domain and model shifts induced by the DiCE generator*. <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*. <https://resolver.tudelft.nl/uuid:6a249d72-9e1e-4e81-abdc-463260c7d1bc>

## Software

Altmeyer, P., & contributors. (2025). *Julia TrustworthyAI/CounterfactualExplanations.jl* (Version v1.4.5). <https://doi.org/10.5281/zenodo.13758044>

Altmeyer, P., & contributors. (2024). *Julia TrustworthyAI/ConformalPrediction.jl* (Version v0.1.13). <https://doi.org/10.5281/zenodo.12799930>

Altmeyer, P., & contributors. (2024). *Julia TrustworthyAI/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, R, Python, MATLAB, C++, SQL, git, Bash, Quarto, LaTeX

## Selected Awards & Honours

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

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

3rd Prize 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.