

KLEYTON DA COSTA

RESEARCHER & AI ENGINEER

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PROFILE

Researcher & AI Engineer at Holistic AI; Ph.D. Student at University College London (2026-2030). Research focuses on AI safety, graph learning, optimization, and probabilistic models, with current emphasis on predictive safety in embodied AI. Core contributor to [holisticai](#) (open-source AI trustworthiness library); core contributor to [quant-sci](#), including [optymus](#) (Optimization methods for science and engineering), [compute-geometry](#) (a research-focused computational geometry library for Python), and [dynamis](#) (a JAX-powered library for state-space models).

EDUCATION

University College London • UK 2026 – 2030
Ph.D. • Computer Science

Pontifical Catholic University of Rio de Janeiro (PUC-Rio) • Brazil Mar 2023 – Mar 2025
M.Sc. • Computer Science

Federal Rural University of Rio de Janeiro (UFRRJ) • Brazil Mar 2017 – Dec 2021
B.Sc. • Economics

WORK EXPERIENCE

AI Engineer – Holistic AI Aug 2025 – present
London, UK

- Core engineering contributor on Holistic AI's AI governance platform, integrating agentic workflows and state-of-the-art evaluation methods deployed across S&P 500 enterprise clients.

Researcher – Holistic AI Oct 2021 – present
London, UK

- Core contributor to the open-source `holisticai` library for assessing and improving the trustworthiness of AI systems; lead author of a [reference paper](#) on model-agnostic explainability metrics for machine learning.

Researcher – PUC-Rio (funded by Petrobras) Mar 2023 – Aug 2025
Rio de Janeiro, Brazil

- Research scientist advised by [Prof. Hélio Côrtes Vieira Lopes](#), developing novel anomaly detection methods for oil well monitoring.

Data Scientist – State Government of Rio de Janeiro Jan 2022 – Mar 2023
Rio de Janeiro, Brazil

- Lead advisor on tax, revenue, and expenditure forecasting for the state government; core contributor to the State strategic development plan, providing data infrastructure and methodological support.

Summer Intern – Holistic AI Jul 2021 – Oct 2021
London, UK

- Co-author of a Bank of England working paper on deep learning model fragility and its implications for financial stability and regulation.

SELECTED RESEARCH PAPERS

- COSTA, K., KOSHIYAMA, A., KANOULAS, D., TRELEAVEN, P. **A Survey on Predictive Safety in Embodied AI**. Pre-print 2026. [\[pdf\]](#)
- COSTA, K., MODENESI, B., MENEZES, I., LOPES, H. **Divergence-Guided Particle Swarm Optimization**. (Under-review) 2026. [\[pdf\]](#)
- KUMAR, R., KOSHIYAMA, A., COSTA, K., et al. **Deep learning model fragility and implications for financial stability and regulation**. Bank of England Working Paper, 2023. [\[pdf\]](#)
- MUNOZ, C.; COSTA, K.; MODENESI, B.; KOSHIYAMA, A. **Evaluating Explainability in Machine Learning Predictions through Explainer-Agnostic Metrics**. 2024. [\[pdf\]](#)
- SILVA, F.L.C; COSTA, K.; CANAS, P.; SALAS, R.; López-Gonzales, J.L. **Statistical and Artificial Neural Networks Models for Electricity Consumption Forecasting in the Brazilian Industrial Sector**. *Energies*, 15(2):588, 2022. [\[pdf\]](#)
- COSTA, K., et al. **Artificial Neural Networks for the Analysis and Forecasting of Economic Phenomena: Assessing the Degree of Monetization of the Brazilian Economy**. Encontro da ANPEC, 2022.
- COSTA, K.; SILVA, F.L.C. **Artificial Neural Networks and Conditional Heteroscedastic Models for Forecasting Exchange Rate**. Proc. Series of the Brazilian Society of Computational and Applied Mathematics, vol. 8, 2021.

REFERENCES

- Bernardo Modenesi (Professor at University of Utah) - bernardo.modenesi@utah.edu
- Ivan Menezes (Professor at PUC-Rio) - ivan@puc-rio.br

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