Kevin Kühl

kevinfkuhl@gmail.com · kevinfkuhl.com · Sydney, Australia

INDUSTRY EXPERIENCE

Technical Team Lead, AI Jul 2026 – present

HR software company · Sydney, Australia

- Lead the engineering team that builds agentic systems for onboarding customers onto an HR platform.
- Build and test systems that read customer documents and spreadsheets, infer how the data is structured and map it onto the platform.
- Write technical specifications, acceptance criteria and test plans with product managers and QA.
- Design the evaluation, deployment and monitoring pipelines, and advise leadership on architecture and the AI roadmap.

Senior Machine Learning Engineer Mar 2023 – Jun 2026

Global pharmaceutical company · Remote

- Built a retrieval and reasoning system for answering biomedical questions from the scientific literature. It took 1st place (exact answers) and 2nd place (ideal answers) in the BioASQ challenge and was published in *JAMIA* (2026).
- Built multi-agent systems with hierarchical retrieval for reasoning over large collections of scientific documents.
- Led the development of a deep learning method for automated structure analysis of cryo-electron microscopy images.
- Worked on link prediction in large biomedical knowledge graphs with tensor factorisation.
- Adapted large language models to biological sequence data (tokenisation, pre-training and fine-tuning).

Machine Learning Engineer Jul 2021 – Mar 2023

Supply chain, global healthcare company · Remote

- Led the development of graph neural networks for failure-mode analysis in industrial networks.
- Built a computer vision pipeline that reads product labels and matches them to the catalogue, used in several distribution centres.
- Built geospatial prediction models for real-time logistics tracking, combining data from several sensors.

Internships 2019 – 2022

Quantitative finance and data science, in France and Brazil.

RESEARCH EXPERIENCE

Research Assistant (part-time) Aug 2018 – Sep 2020, 2023

University of São Paulo · Supervisor: Prof. Tiago Pereira

- Reconstructed the dynamics of complex networks from time series with sparse recovery and compressed sensing.
- Studied Lyapunov exponents as early-warning signals of regime transitions in dynamical systems.
- Co-developed COMORBUSS, a network-based epidemiological model used during the COVID-19 pandemic.

Research Intern Jan – Feb 2019

Imperial College London, Department of Mathematics · Supervisor: Prof. Jeroen Lamb

- Worked with Prof. Karl Friston's group at UCL on predicting epileptic seizures from EEG, using network reconstruction and Lyapunov exponents as early-warning signals.

EDUCATION

PhD in Mathematics (candidate) May 2024 – present

University of New South Wales, Sydney · Machine learning and operator-theoretic methods for nonlinear dynamical systems · Supervisor: Prof. Gary Froyland

MSc in Applied Mathematics and Statistics 2020 – 2022

Institut Polytechnique de Paris · Thesis: Optimal capital allocation for volatility strategies

Engineering Degree (Diplôme d'Ingénieur) 2020 – 2022

Télécom Paris · Specialisation in signal processing for artificial intelligence

BSc in Computer Engineering 2017 – 2023

University of São Paulo · Thesis: Iterated function systems and an application to fractal image compression

Technical Degree in Electrical and Electronic Technologies 2011 – 2014
Federal Institute of Espírito Santo

TEACHING

School of Mathematics and Statistics, UNSW Sydney

MATH1131 — Mathematics 1A	T1 & T2 2025
MATH2121 — Theory and Applications of Differential Equations	T2 2025
MATH1251 — Mathematics for Actuarial Studies and Finance 1B	T2 2025
MATH1081 — Discrete Mathematics	T2 2025

AWARDS & SCHOLARSHIPS

ANZIAM 2025 Student Support Scheme	2025
UNSW University International Postgraduate Award	2024
São Paulo Research Foundation (FAPESP) Scholarship	2019, 2023
CAPES Scholarship (Coordination for the Improvement of Higher Education Personnel)	2021
Institut Mines-Télécom Scholarship	2020
CNPq Scholarship (National Council for Scientific and Technological Development)	2018
Silver Medal, Latin American University Physics Olympiad	2018
Gold Medal, Brazilian Physics Olympiad for Public Schools	2014

SKILLS

Languages	Portuguese (native), English, French, Spanish (fluent)
Programming	Python, C++, C, Julia, MATLAB, SQL
Frameworks	PyTorch, PyTorch Geometric, DGL, TensorFlow, LangChain, LangGraph, torchvision, OpenCV
Infrastructure & MLOps	Linux, Docker, CI/CD (Jenkins, GitHub Actions), pytest, Grafana, AWS, Azure

PAPERS

H2L-Bench: a benchmark for agentic planning under uncertainty in drug discovery
P. Lemos, N. T. H. Nguyen, **K. Kühl**, A. Kashyap, A. Elnaggar, D. Ding, M. Mustapha, U. Eser, T. Schultz
NeurIPS 2026 Workshop on AI for Drug Discovery (AI4DD), 2026.

Learning dynamically inspired bases for Koopman and transfer operator approximation
G. Froyland, **K. Kühl**
SIAM Journal on Scientific Computing, 48(4):C967–C990, 2026. Preprint: arXiv:2505.05085.

Med.ai ASK: an agentic system for biomedical question answering
N. T. H. Nguyen, D. S. Lituiev, Z. Liu, A. Kashyap, G. Jenkinson, **K. Kühl**, C. Corrado, N. M. Patel, K. Snigdha, S. Saeedi, D. Smith, N. Baro, T. Schultz
Journal of the American Medical Informatics Association, 33(6):1134–1145, 2026.

TALKS

Learning dynamically inspired bases for Koopman and transfer operator approximation
Isaac Newton Institute, workshop “Operator approaches to dynamics: new connections” · Cambridge, UK · August 2026 · video

Learning dynamically inspired bases for Koopman and transfer operator approximation
MATRIX, workshop “Statistical Properties and Extremes in Dynamical Systems: Theory and Numerics” · Creswick, VIC, Australia · January 2026

Learning transfer operator dynamics on latent spaces
SIAM Conference on Applications of Dynamical Systems (DS25) · Denver, CO, USA · May 2025

Learning transfer operator dynamics on latent spaces
ANZIAM 2025 · Coffs Harbour, NSW, Australia · February 2025