Nathan Schneider Gavenski

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Education

King's College London (KCL), United Kingdom
> Ph.D., Computer Science, 2022 to 2026 (expec.)

Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS), Brazil
> MSc, Computer Science, 2021
> BSc, Information Systems, 2018

Projects

Imitation Learning Datasets   Active
Project for creating and using imitation learning datasets for benchmarking
Status: 12 Github stars and more than 8,585 downloads

Python Watcher   Active
Project for a watcher that reruns scripts after each change in a directory
Status: 25 Github stars

ProVe: Provenance Verification for Wikidata claims   2025
A tool for reference verification of Wikidata utilising various language models.
Working with: Albert Peñuela, Odinaldo Rodrigues and Elena Simperl

Super Mario Bros: The Turing Quest, Exhibition   2024
The demonstration was a chance to explore how humans perceive human and AI behaviour
On: The King's Festival of Artificial Intelligence and Royal Institution Experience: sensational senses

Can you help me?, Exhibition   2023
The demonstration invited visitors to interact with an artificial intelligence to help it to find its friend in photos
On: The King's Festival of Artificial Intelligence

Teaching Experience

Data Science: Deep Learning II   2024 - 2021

Visiting Lecturer at PUCRS Online, Porto Alegre, Brazil

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Introduction to Artificial Intelligence   Winter 2025

Teaching Assistant for Dr. Martim Brandao and Dr. David Johan Marzagao

Introduction to Software Engineering   Winter 2025

Teaching Assistant for Dr Gunel Jahangirova and Dr Leonardo Magela Cunha

Elementary Logic With Applications   Spring 2023-2024

Teaching Assistant for Dr. Odinaldo Rodrigues and Dr. Christopher Hampson, at King's College London

Logic and Knowledge Representation   Spring 2023-2024

Teaching Assistant for Dr. Odinaldo Rodrigues and Dr. Christopher Hampson, at King's College London

Optimisation Methods   Summer 2022

Teaching Assistant for Prof. Tomasz Radzik and Dr. Yali Du, at King's College London

Artificial Intelligence Fundamentals   Summer 2020

Teaching Assistant for Prof. Rodrigo Barros and Prof. Felipe Meneguzzi, at PUCRS

Applied Artificial Intelligence   Summer 2020

Teaching Assistant for Prof. Rodrigo Barros and Prof. Felipe Meneguzzi, at PUCRS

Business Intelligence   Spring 2020

Teaching Assistant for Prof. Rodrigo Barros, at PUCRS

Industrial Experience

Teia Labs – Web Developer, Porto Alegre, Brazil   2022 - 2021

Software developer for web-based applications using React, NoSQL and PyTorch

ADP Brazil Labs – Software Developer II, Porto Alegre, Brazil   2019 - 2018

Software developer for a web-base application using Angular JS and React

IBM – QA Test Analyst, Porto Alegre, Brazil   2018 - 2014

Quality Assurance analyst for banking solutions (Web, Mobile, Core, Microservices)

Renner – Intern, Porto Alegre, Brazil   2013 - 2013

Intern within the Information Security area at Lojas Renner

Dell – Intern, Porto Alegre, Brazil   2013 - 2012

Intern for the administration of Windows and Linux servers of production systems

Distinction

Nominated for the Outstanding Teaching Assistant Award   2025

King's College London

Fully funded PhD at STAI CDT, King's College London   2022

Imitation Learning in a Multi-Agent System Scenario

Awarded for Inclusion Research Award, Google Research   2022

Bidirectional Neural Machine Translation for the Brazilian Sign Language

Graduated with summa cum laude, Msc PUCRS 2021

Self-supervised imitation learning from observation

Academic Service

Journal Reviewer

IEEE Transactions on Neural Networks and Learning Systems (TNNLS)

Ad Hoc Reviewer

International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)	2023 - 2025
The International Joint Conference on Neural Networks (IJCNN)	2021 - 2025
International Joint Conference on Artificial Intelligence (IJCAI)	2024 - 2025
The British Machine Vision Conference (BMVC)	2022 - 2025
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)	2022 - 2023
IEEE Conference on Artificial Intelligence (IEEE CAI)	2023

Publication

Conference Articles

1. **Explorative imitation learning: A path signature approach for continuous environments** Nathan Gavenski, Juarez Monteiro, Felipe Meneguzzi, Michael Luck, & Odinaldo Rodrigues. In: Proceedings of 27th European Conference on Artificial Intelligence, ECAI 2024. DOI: `https://doi.org/10.3233/FAIA240660`

2. **Imitation Learning Datasets: A Toolkit For Creating Datasets, Training Agents and Benchmarking**. Nathan Gavenski, Michael Luck & Odinaldo Rodrigues. In: Proceedings of 23rd International Conference on Autonomous Agents and Multi-Agent Systems, AAMAS 2024. DOI: `https://dl.acm.org/doi/10.5555/3635637.3663292`

3. **Self-Supervised Adversarial Imitation Learning**. Juarez Monteiro, Nathan Gavenski, Felipe Meneguzzi, & Rodrigo C. Barros. In: Proceedings of the 2023 International Joint Conference on Neural Networks, IJCNN 2023, pp. 1-8, IEEE Computer Society. DOI: `https://doi.org/10.1109/IJCNN54540.2023.10191197`

4. **How Resilient Are Imitation Learning Methods to Sub-optimal Experts?**. Nathan Gavenski, Juarez Monteiro, Adilson Medronha, & Rodrigo C. Barros. In: Proceedings of 11th Brazilian Conference, BRACIS 2022, pp. 449-463, Springer International Publishing. DOI: `https://doi.org/10.1007/978-3-031-21689-3_32`

5. **Efficient counterfactual debiasing for visual question answering**. Camila Kolling, Martin More, Nathan Gavenski, Eduardo Pooch, Otávio Parraga, & Rodrigo C. Barros. In: Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision, WACV 2022, pp. 3001-3010, IEEE Computer Society. DOI: `https://doi.org/10.1109/WACV51458.2022.00263`

6. **Object-based goal recognition using real-world data**. Rger Granada, Juarez Monteiro, Nathan Gavenski, & Felipe Meneguzzi. In: Proceedings of the 19th Mexican International Conference on Artificial Intelligence, MICAI

2020, pp. 325-337, Springer International Publishing. DOI: `https://doi.org/10.1007/978-3-030-60884-2_24`

7. **Imitating Unknown Policies via Exploration**. Nathan Gavenski, Juarez Monteiro, Roger Granada, Felipe Meneguzzi, & Rodrigo C. Barros. In: Proceedings of the 2020 British Machine Vision Virtual Conference, BMVC 2020, pp. 1–8, BMVA. URL: `https://www.bmvc2020-conference.com/assets/papers/0774.pdf`

8. **Augmented Behavioral Cloning from Observation**. Juarez Monteiro, Nathan Gavenski, Roger Granada, Felipe Meneguzzi, & Rodrigo C. Barros. In: Proceedings of the 2020 International Conference on Neural Networks, IJCNN 2020, pp. 1–8. IEEE Computer Society. DOI: `https://doi.org/10.1109/IJCNN48605.2020.9207672`

9. **Attention-based 3D Object Reconstruction from a Single Image**. Andrey Salvi, Nathan Gavenski, Eeduardo Pooch, Felipe Tasoniero & Rodrigo C. Barros. In: Proceedings of the 2020 International Joint Conference on Neural Networks, IJCNN 2020, pp. 1-8. IEEE Computer Society. DOI: `https://doi.org/10.1109/IJCNN48605.2020.9206776`

Journal Articles

10. **Imitation Learning: A Survey of Learning Methods, Environments and Metrics**. Nathan Gavenski, Felipe Meneguzzi, Odinaldo Rodrigues, & Michel Luck Under review 2024 URL: `https://arxiv.org/abs/2404.19456`

11. **Debiasing methods for fairer neural models in vision and language research: A survey**. Otávio Parraga, Martin More, Christian Oliveira, Nathan Gavenski, Lucas Kupssinskü, Adilson Medronha, Luis Moura Gabriel Simões, & Rodrigo C. Barros ACM Computing Surveys, Accepted on December 2023. DOI: `https://doi.org/10.1145/3637549`

12. **Artificial intelligence to predict the risk of mechanical ventilation in cases of severe COVID-19**. Mariana F. de Godoy, José M. Chatkin, Rosana Rodrigues, Gabriele C. Forte, Edson Marchiori, Nathan Gavenski, Rodrigo C. Barros, & Bruno Hochhegger. Radiologia Brasileira, RB 2022, volume 56, pp. 81-85. DOI: `https://doi.org/10.1590/0100-3984.2022.0049`

Dissertation

13. **Self-supervised Imitation Learning from Observation**. Gavenski, N. and Barros, R. C.. Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS). URL: `http://tede2.pucrs.br/tede2/handle/tede/9778`

Language

Native Portuguese (Brazilian)

Advanced English (Academic IELTS Overall Score: 7.5)

Intermediate German (Deutsches Sprachdiplom Score: A2)

Elementary Spanish