

Jannis Blüml | Curriculum Vitæ

PhD Student in Computer Science

Merckstr. 18 – 64283 Darmstadt, Germany

✉ me@jblue.ml • 🏠 www.jblue.ml • 🌐 bluemlJ

Profile

PhD student in reinforcement learning with a focus on object-centric RL, robustness/generalisation and planning methods. I investigate the influence of representations on the learning behaviour of deep agents and try to connect this with human learning.

Education

PhD/Doctoral Student

Technical University of Darmstadt

10/2021 – present

M. Sc. Internet- und Web-based Systems

Technical University of Darmstadt, GPA: 3.72

10/2019 – 10/2023

- Major interests: Data Management, Machine Learning
- Thesis: Multi-Agent Reinforcement Learning and MCTS for Stratego

M. Sc. Computer Science

Technical University of Darmstadt, GPA: 3.72

10/2018 – 06/2021

- Major interests: Natural Language Processing, Machine Learning and Deep Learning
- Thesis: Multi-Agent Reinforcement Learning and MCTS for Stratego

B. Sc. Computer Science

Technical University of Darmstadt, GPA: 3.28

10/2014 – 06/2018

- Thesis: Enhancing dimension reduction visualizations with topographical information

Abitur (High school diploma)

Ludwig-Geißler-Schule Hanau, GPA 3.4

08/2011 – 05/2014

Work Experience

Scientific Researcher

Technical University of Darmstadt and hessian.AI

10/2021 – present

- Project: Third Wave of AI (3AI) - Extend and improve current AI among others in the field of systems, methods and application

Teaching Position

Ludwig-Geißler-Schule Hanau

08/2018 – 06/2021

- High school teacher for the subjects "Data Science" and "Computer Science"

Tutor & Student Assistant

Technical University of Darmstadt, Department of Computer Science

10/2015 – 09/2018

- Supervising and administrating the practical courses for the lectures "Technical Computer Science 1" and "General Computer Science 1".
- Tutor for the lectures "Computer System Security", "Technical Computer Science 1", "Technical Computer Science 2", "Visual Analytics" and "General Computer Science 1".

Student Assistant

Fraunhofer IGD

10/2017 – 06/2018

- Collaboration in the Visual Analytics department as part of my B.Sc. thesis

Tutor

Schülerhilfe GmbH

11/2015 – 08/2017

Extracurricular

Representative of the Scientific Staff

Technical University of Darmstadt, Department of Computer Science

2023 – ongoing

- Elected member of the faculty council, university assembly, the senate committee for teaching and more

Member of the Student Council

Technical University of Darmstadt, Department of Computer Science

2015 – 2021

- Main organizer of the programming pre-course with approx. 300 to 400 participants since 2016
- Elected member in various committees such as the Faculty Council or the Teaching and Study Committee
- Main organizer of the orientation event with approx. 300-450 participants and approx. 50-70 helpers in 2017 and 2018

Member of Board and Study Committee

Fakultätentag Informatik e.V.

2017 – 2020

Member of the Youth Jury

German Children's Literature Award (Deutscher Jugendliteraturpreis)

2015 – 2018

Selected Publications & Preprints

Deep Reinforcement Learning Agents are not even close to Human Intelligence *arXiv preprint, 2025*

Jannis Blüml*, Quentin Delfosse*, Fabian Tatai, Théo Vincent, et al.

Deep Reinforcement Learning via Object-Centric Attention (OCCAM) *arXiv preprint, 2025*

Jannis Blüml*, Cedric Derstroff*, Bjarne Gregori, Elisabeth Dillies, Quentin Delfosse, Kristian Kersting

OCArari: Object-Centric Atari 2600 Reinforcement Learning Environments *RLJ, 2024*

Quentin Delfosse*, Jannis Blüml*, Bjarne Gregori, Sebastian Sztwiertnia, Kristian Kersting

Representation Matters for Mastering Chess: Improved Feature Representation in AlphaZero Outperforms Switching to Transformers *ECAI, 2024*

Johannes Czech, Jannis Blüml, Kristian Kersting, ...

AlphaZe**: AlphaZero-like baselines for imperfect information games are surprisingly strong

Frontiers in AI, 2023

Jannis Blüml, Johannes Czech, Kristian Kersting

Expertise & Experience

Research & ML Stack

Deep Learning: PyTorch, JAX, TensorFlow

Reinforcement Learning: Gymnasium (OpenAI Gym), Stable-Baselines3, CleanRL

ML/Data: NumPy, pandas, SciPy, scikit-learn

Programming

Primary: Python

Additional: C++, Java, C, R

Tooling & Engineering

Dev & OS: Linux/UNIX, Git, Bash

Experimentation: Weights & Biases (wandb), Docker, Slurm

Writing: \LaTeX

Languages

German (native), English (fluent)

Other

Driver's License (Class B)