Julian Valline

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Summary

I am a 1st year PhD Student at the University of Luxembourg, conducting my research at the Luxembourg Institute of Science and Technology (LIST) within the ALT-EDIC LLMs4EU project. My work focuses on the evaluation and benchmarking of Large Language Models (LLMs). This builds upon my Master's in NLP from Trier University and Bachelor's in Artificial Intelligence from JKU Linz, where I developed a strong foundation in data science and machine learning, particularly focused on LLMs. My research now centers on creating robust, cross-lingual evaluation methodologies, with a specific emphasis on low-resource languages and benchmark detection. I am driven to advance the field of AI by ensuring the trustworthy and reliable assessment of LLMs across diverse linguistic landscapes. My prior experience includes developing and implementing machine learning pipelines, allowing me to effectively translate theoretical knowledge into practical solutions. I am passionate about leveraging my skills to contribute to the responsible development and deployment of cutting-edge AI technologies.

Experience

Doctoral Researcher — Esch-Sur-Alzette, Lux.

Luxembourg Institute of Science and Technology (LIST), Full-Time — March 2025 - Present

- PhD Candidate at University of Luxembourg ALT-EDIC LLMs4EU Project
- Researching Evaluation & Benchmarking of Linguistic Capabilities in Large Language Models (LLMs)
- Focus on Low-Resource Languages & Cross-Lingual Applicability | Benchmark Detection

Front Desk Receptionist — Ora, Italy

Hotel Markushof, Full-Time — Jun 2019 – Oct 2019

- Working as a hotel receptionist for a few months gave me the opportunity to strengthen my communication and language skills in various languages.

ICT-Helpdesk and System Administrator — Bolzano, Italy

Free University of Bozen-Bolzano, Full-Time — Aug 2016 – Feb 2019

- Helpdesk/customer support
- System Administrator
- Organized ICT training for academic staff
- Wrote texts and created videomaterial for PR related purposes

Information Technology Intern — Bolzano, Italy

Datic OHG, Internship — Jul 2015 – Aug 2015

- Internship during which I was creating templates and programming modules for the CMS.

Education

Large Language Models, PhD, University of Luxembourg — Esch-Sur-Alzette, Lux.

Doctor of Philosophy — Mar 2025 – Present

Natural Language Processing, M.Sc., Trier University — Trier, Germany

Master of Science — Oct 2022 – Nov 2024

- **Thesis:** "Synthesizing an Instruction Tuning Dataset for Luxembourgish".
  - Gained a strong theoretical understanding of generative decoder models and the process of instruction fine-tuning open-source LLM's.
  - Practical project involved the generation of synthetic Luxembourgish data for IT process with open-source LLMs.
- **Coursework:** Machine Learning for Natural Language Understanding, Natural Language Processing, Advanced

Topics in Computational Text and Media Science, Data Mining, Digital Libraries and Foundations of Information Retrieval.

Artificial Intelligence, B.Sc., Johannes Kepler University Linz — Linz, Austria

Bachelor of Science — Mar 2020 – Mar 2023

- **Thesis:** "Zero-shot transfer of monolingual language models".
  - Gained a strong theoretical understanding of bidirectional encoder-decoder models and the process of transfer learning with linear mappings.
  - Practical project involved investigating the transferability of a pre-trained English language model to German, by training a linear projection matrix for transferring German word embeddings to the English space.
- **Coursework:** Mathematics for AI 1-3, Numerical Optimization, Reinforcement Learning, Machine Learning: Supervised and Unsupervised Techniques, Natural Language Processing with Deep Learning.

SKILLS

Programming Languages	**Experienced:** Python | **Familiar:** Java, R
Machine Learning	NLP, LLMs, Supervised Learning, Unsupervised Learning, Reinforcement Learning, Deep Learning, Computer Vision
Frameworks	HuggingFace, Langchain, Unsloth, Ollama, OpenAI API, GitHub, Anaconda, Pycharm
Libraries	PyTorch, Scikit-learn, Tensorflow, Keras, Pandas, Numpy, Transformers
Languages	**Native:** German, Italian | **Fluent:** English | **Proficient:** Spanish, Dutch | **Good working knowledge:** French

VOLUNTEERING

Youth Center "JuzeFly" — Laives, Italy

IT Administrator and Consulting — Oct 2022 - Ongoing

- IT administrator, create and manage email and Microsoft 365 accounts for employees
- Provide IT related consulting

Youth Center "JuzeFly" — Laives, Italy

Board member — Jun 2017 - Oct 2022

- Supervised hiring process of new employees
- Took part in the yearly budget planning
- Lead IT administrator, created and managed email and Microsoft 365 accounts for employees
- Helped with planning projects and activities for the youth center.

PERSONAL PROJECTS

Experimenting with LLMs 2024

- Created a small-scale synthetic instruction tuning set in Luxembourgish with LLama-3.1-405-b-instruct and evaluated a subset with Nvidia-Nemotron-4-340b-reward and human evaluators.
- **Technologies used:** Python, HuggingFace, Nvidia NIM, OpenAI API, LangChain, Ollama.