

# Benno Krojer

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## EDUCATION

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**MILA – Quebec Artificial Intelligence Institute / McGill University** 2021 – 2026

*PhD in Computer Science*

*Montreal, Canada*

Courses: Applied Machine Learning, Mathematical Tools for Computer Science, Representation Learning (UdeM), Reinforcement Learning (all with grade A)

**LMU Munich**

2017 – 2020

*Bachelor of Science in Computational Linguistics, Minor in Computer Science*

*Munich, Germany*

- Grade: 1.1 (equivalent to GPA of 3.9), top of class
- Thesis: Are Pretrained Language Models Symbolic Reasoners Over Knowledge? (supervised by Hinrich Schütze)

**Trinity College**

Sept 2018 – Apr 2019

*Erasmus Exchange for 2 semesters*

*Dublin, Ireland*

## INDUSTRY AND RESEARCH EXPERIENCE

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**Research Intern in the JEPA team (full-time)**

July 2024 – Jan 2025

*Meta (FAIR)*

*Montreal, Canada*

- Benchmarking physical world understanding in VideoLLMs (supervised by Mido Assran and Nicolas Ballas)

**Research Intern in Language Grounding (full-time)**

Apr 2021 – Aug 2021

*MILA - Quebec Artificial Intelligence Institute*

*Montreal, Canada*

- \* Vision-and-Language Research

**Research Intern in Machine Translation (full-time)**

Dec 2020 – Mar 2021

*Lilt GmbH*

*Berlin, Germany*

- \* Research on novel attention mechanisms in Transformers to improve coverage in Neural Machine Translation

**Machine Learning Intern in Computer Vision for Robots (full-time)**

Sept 2020 – Nov 2020

*Micropsi Industries*

*Berlin, Germany*

- \* Making the computer vision model deployed on robots more robust against difficult light conditions

**Research Assistant in Machine Translation (20h/week)**

Feb 2020 – Aug 2020

*LMU Munich*

*Munich, Germany*

- \* Researched adversarial attacks, data augmentation and test set creation for Coreference Resolution in Neural Machine Translation together with Prof. Alexander Fraser and his PhD students (publication listed below)
- \* Responsible for code repository and 2-3 sections of the resulting paper

**Deep Learning Engineer (20h/week)**

May 2019 – Mar 2020

*Helsing (named Hellsicht GmbH at the time)*

*Munich, Germany*

- \* Cell image segmentation pipeline with U-Net & ResNet models for client from the pharmaceutical industry
- \* Predictive Maintenance in mechanical systems
- \* Developing a demo for a workshop on automatic visual inspection of surfaces
- \* Clustering of point clouds into relevant buildings or landscape objects

**Computational Linguistics Programmer (10h/week)**

Feb 2017 – Jul 2018

*Intrafind GmbH*

*Munich, Germany*

- \* Improving language identification system used in Intrafind's Search Engine
- \* Identifying bugs in complex source code and analyzing corpora

## PUBLICATIONS

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- [Learning Action and Reasoning-Centric Image Editing from Videos and Simulation](#)  
**Benno Krojer**, Dheeraj Vattikonda, Luis Lara, Varun Jampani, Eva Portelance, Christopher Pal, Siva Reddy.  
*Conference on Neural Information Processing Systems (NeurIPS Spotlight, Dataset & Benchmarks Track), 2024.*
- [Are Diffusion Models Vision-And-Language Reasoners?](#)  
**Benno Krojer**, Elinor Poole-Dayana, Vikram Voleti, Christopher Pal, Siva Reddy.  
*Conference on Neural Information Processing Systems (NeurIPS), 2023.*
- [Image Retrieval from Contextual Descriptions](#)  
**Benno Krojer**, Vaibhav Adlakha, Vibhav Vineet, Yash Goyal, Edoardo Ponti, Siva Reddy.  
*Association for Computational Linguistics (ACL), 2022.*
- [Are Pretrained Language Models Symbolic Reasoners Over Knowledge?](#)  
Nora Kassner\*, **Benno Krojer**\*, Hinrich Schütze.  
*Conference on Computational Natural Language Learning (CoNLL), 2020.*
- [ContraCAT: Contrastive Coreference Analytical Templates for Machine Translation](#)  
Dario Stojanovski\*, **Benno Krojer**\*, Denis Peskov\*, Alexander Fraser.  
*Conference on Computational Linguistics (COLING), 2020.*
- [Improving Automatic VQA Evaluation Using Large Language Models](#)  
Oscar Manas, **Benno Krojer**, Aishwarya Agrawal.  
*AAAI Conference on Artificial Intelligence, 2023*
- [Pragmatic Inference with a CLIP Listener for Contrastive Captioning](#)  
Jiefu Ou, **Benno Krojer**, Daniel Fried.  
*Findings of the Association for Computational Linguistics (ACL) 2023*

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\*equal contribution

## SCHOLARSHIPS

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- Vanier Scholarship (50.000 CAD/year, 2023 - 2026)
- Nick Cercone Scholarship (6.000 CAD, 2022)
- FRQNT Scholarship (declined, 2023)

## ACADEMIC/COMMUNITY SERVICE AND TALKS

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- Reviewing: NeurIPS 2024, NeurIPS DB Track 2024, COLM (Ethics Reviewer) 2024, ACL 2024, COLING 2024, [Multilingual Multimodal Learning \(MML\) Workshop at ACL 2022](#)
- Talks: FAIR Reading Group (September 2024), AI2 Mosaic (February 2024), ACL Oral Presentation (May 2022), Samsung/Mila/NYU Workshop (April 2022), Copenhagen NLP Reading Group (April 2022)
- Workshop Organization: NewInML at NeurIPS 2023 (lead organizer of speaker selection)
- Supervision/Mentoring: Nooshin Soheililangroodi (undergraduate independent study in CS, McGill, 2024), Michelle Yang (undergraduate independent study in Linguistics, McGill, 2021)
- Teaching: TA for COMP 451 (Fundamentals of Machine Learning)

- Volunteering for [AI Helps Ukraine](#) (Nov 2023)
- McGill BRIDGE Mentoring Program (Winter 2024): CS grad students are matched with underrepresented undergrads to help them get started in research
- Reviewer of applications for Mila PhD/MSc cohort (Dec 2023)

## SKILLS

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**Natural Languages:** German (native), English (near native), French (B1)

**Programming Languages:** Python, Java, C++, Haskell, Prolog, Javascript/HTML

**Technologies:** PyTorch, NumPy, Tensorflow, slurm, pandas bash, git, OpenCV, Matplotlib, LaTeX, slurm, NLTK, JavaFX, Docker

## EXTRA-CURRICULAR

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### Founder of LaGMEI Reading Group

Oct. 2021 – Today

*Mila*

*Montreal, Canada*

- \* Reading group focusing on Language Grounding in Multi-Modal Environments and Interaction (LaGMEI)

### Founder of [PhilosophiaMunich](#), a Student Philosophy Society

Aug. 2019 – Jul. 2021

*TUM/LMU Munich*

*Munich, Germany*

- \* Organization of regular paper discussions, speaker events, dedicated reading groups and socials
- \* Creating Social Media Content & recruiting new members

### Competitive Ultimate Frisbee

2011 – Today

- \* Highlights: U24 Worlds and U17 Euros for German National Team, 8th best club in Europe 2018
- \* Coaching: currently Mixed senior team in Montreal, Munich Juniors Team for several years
- \* Supervised children at sports camp for two years during their school holidays, as full-time paid voluntary work

### Member of Student's Committee (Fachschaft)

Oct. 2017 – Jun. 2018

Organization of events such as Christmas or Summer party