

Nathan Godey

Final-year PhD student / Available: Feb 25

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*I am a third-year PhD student looking for a post-doctoral research position.
My main interests are efficient representation learning for NLP and
understanding the limitations of tokenization in LMs.*

Education

- Dec 21 – Dec 24 **PhD in Natural Language Processing (final year)**, Inria & Sorbonne, Paris
"Improving Representations for Language Modeling". Supervision: Éric de la Clergerie and Benoît Sagot.
- Sep 20 – Sep 21 **Master, Machine Learning**, ENS Paris-Saclay, Paris area, GPA: 4.0 (17.3/20)
Deep Learning, NLP & Speech, Computer Vision, Optimal Transport, Neuroscience, Metaheuristics, Graphs in ML.
- Sep 17 – Sep 20 **Engineering Degree, Maths & CS**, École des Ponts, Paris area, GPA: 3.65
Top-3 French Engineering schools. Machine Learning, Algorithmics, Optimization, Probability, Statistics.

Publications

- COLM 2024 *Why do small language models underperform? Studying LM Saturation via the Softmax Bottleneck*
Nathan Godey, Éric de la Clergerie, Benoît Sagot
- COLING 2024 *On the Scaling Laws of Geographical Representation in Language Models*
Nathan Godey, Éric de la Clergerie, Benoît Sagot
- ICLR 2024 *Headless Language Models: Learning without Predicting with Contrastive Weight Tying*
Nathan Godey, Éric de la Clergerie, Benoît Sagot
- EACL 2024 *Anisotropy Is Inherent to Self-Attention in Transformers*
Nathan Godey, Éric de la Clergerie, Benoît Sagot
- ACL 2023 *Is Anisotropy Inherent to Transformers?*
SRW **Nathan Godey**, Éric de la Clergerie, Benoît Sagot
- EMNLP 2022 *MANTa: Efficient Gradient-Based Tokenization for Robust End-to-End Language Modeling*
Nathan Godey, Roman Castagné, Éric de la Clergerie, Benoît Sagot

Academic Visits

- Apr 24 – Jul 24 **Visiting PhD Student**, University of Edinburgh, UK
3-month collaboration with Edoardo Ponti as part of my PhD research on gradient-based KV cache compression.

Teaching

- Dec 23 – Mar 24 **Advanced NLP**, Lecturer, EPITA, Paris
I wrote and gave a state-of-the-art NLP lecture for AI Masters' final year students.
- Dec 22 – May 23 **Python for Mathematics**, Teaching Assistant, Sorbonne Université, Paris
I taught numerical techniques in Python in various applied maths domains.
- Dec 21 – May 22 **Linear Algebra 2**, Teaching Assistant, Sorbonne Université, Paris
I supervised Linear Algebra exercises in blackboard sessions.

Professional Experience

- May 21 – Nov 21 **NLP Research intern**, French Ministry of Defence, Paris
Low-resource Named Entity Recognition using self-training and cross-lingual alignment.
- Jan 20 – Jul 20 **AI Engineer intern**, Stellia AI, Paris
Chatbot and search engine development for an artificial teaching assistant.

Talks

- Seminar, Naver Labs Europe (11/2024)
- *Topics in NLP* course, EPFL NLP Group (11/2024)
- PhD seminar, Inria (02/2024)
- DeepVoice seminar, Sorbonne Université (06/2022)

Service

Reviewing EMNLP 2022, ACL 2023, EMNLP 2023, EACL 2024, NAACL 2024, ACL 2024.