

Gustave Cortal

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PhD student in Natural Language Processing at ENS Paris-Saclay. Over 5 years' experience with language models across research labs and startups. Passionate about cognitive science and optimizing language models for niche domains.

Education

École Normale Supérieure Paris-Saclay

Ph.D. student in natural language processing. Advisors: A. Finkel, P. Paroubek, and L. Ye

Paris, France

2022 - 2026

Université de Technologie de Compiègne

Master's degree in data science and artificial intelligence

Compiègne, France

2017 - 2022

- 6-month part-time research project on sentiment analysis of tweets related to Parcoursup (2021).

National Taiwan University of Science and Technology

Exchange program

Taipei, Taiwan

Feb - Jul 2020

- Ranked 1st in the computer vision course.

Shanghai University

Exchange program

Shanghai, China

Feb - Jul 2019

Selected work experience

Research Scientist, Callyope (startup)

NLP for quantifying memory, future thinking, and the self in mental health

Paris, France

Mar - Sep 2025

- Built clustering & labeling methods to discover interpretable risk topics using language models.
- Designed prompt-optimization workflows to compare patient commonalities and differences.

Research Scientist, École Normale Supérieure Paris-Saclay

Emotion recognition by combining psychological theories with NLP [[internship report](#)]

Paris, France

Feb - Jul 2022

- Performed aspect-based emotion identification on narrative texts using language models.
- Released a benchmark for emotion analysis based on psychological components.

Software Engineer, Dashlane

NLP for code generation (part-time)

Paris, France

Sep - Feb 2022

- Designed a transformer-based approach for HTML generation to improve form automation.
- Optimized training using Low-Rank Adaptation and 8-bit quantization (one of the first implementations).

Software Engineer, Makezu (startup)

NLP for lead generation on social networks [[internship report](#)]

Paris, France

Sep - Feb 2021

- Extended data extraction pipelines across Quora, Twitter, and LinkedIn.
- Fine-tuned language models for trend analysis and user profiling on social media.

Selected open-source projects

My research models are publicly hosted on Hugging Face and were trained using the Jean Zay supercomputer.

A repo for [lightweight preference optimization](#) using LoRA and ORPO.

[Piaget](#), a model fine-tuned for psychological reasoning, and [Beck](#), a model aligned with psychotherapeutic preferences.

[PsychologicalReasoning-15k](#), open psychological and philosophical reasoning traces.

[Oneirogen](#), a model for dream generation, and [Dream-T5](#), a model for emotion and character prediction in dream narratives.

Teaching experience

Primary Instructor, École Pour l'Informatique et les Techniques Avancées

Course title: Natural Language Processing (150 students, 90h)

Paris, France

2024 - 2025

Developed a complete course with slides, exercises, and exams available on [Github](#).

Primary Instructor, École Normale Supérieure Paris-Saclay

Course title: *Statistical Learning with R* (25 students, 31h)

Paris, France

Feb - Apr 2023

Developed a complete course with slides, exercises, and exams available on [Github](#).

Teaching Assistant, CentraleSupélec

Course title: *Algorithms and Complexity* (30 students, 21h)

Paris, France

Sep - Feb 2023

Peer-reviewed publications

★ International conference ▲ National conference ■ National journal

★ [Formalizing Style in Personal Narratives](#). **G. Cortal** and A. Finkel. In *Proceedings of the 2025 Conference on Empirical Methods in Natural Language Processing (EMNLP 2025)*. [[poster](#)] [[slides](#)] [[video](#)]

★ [Textualized and Feature-based Models for Compound Multimodal Emotion Recognition in the Wild](#). N. Richet, S. Belharbi, H. Aslam, M. Schadt, M. González-González, **G. Cortal**, A. Koerich, M. Pedersoli, A. Finkel, S. Bacon, E. Granger. In *Proceedings of the 7th Workshop and Competition on Affective Behavior Analysis in-the-wild (ABAW @ ECCV, 2024)*.

★ [Improving Language Models for Emotion Analysis: Insights from Cognitive Science](#). **G. Cortal** and C. Bonard. In *Proceedings of the Workshop on Cognitive Modeling and Computational Linguistics @ ACL, 2024*.

▲ [Améliorer les modèles de langue pour l'analyse des émotions : perspectives venant des sciences cognitives](#). **G. Cortal** and C. Bonard. In *Actes de la 31ème Conférence sur le Traitement Automatique des Langues Naturelles, volume 1 : articles longs et prises de position, 2024*. [[poster](#)]

★ [Sequence-to-Sequence Language Models for Character and Emotion Detection in Dream Narratives](#). **G. Cortal**. In *Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024)*. [[slides](#)] [[video](#)]

■ [Automatisation du codage des personnages et de leurs émotions dans les récits de rêves avec des modèles de langue](#). **G. Cortal**. In *Traitement Automatique des Langues, Volume 65, Numéro 1 : Varia, 2024*.

★ [Emotion Recognition based on Psychological Components in Guided Narratives for Emotion Regulation](#). **G. Cortal**, A. Finkel, P. Paroubek, L. Ye. In *Proceedings of the 7th Joint SIGHUM Workshop on Computational Linguistics for Cultural Heritage, Social Sciences, Humanities and Literature @ EACL, 2023*. [[slides](#)] [[video](#)]

Invited talks

[Natural language processing for subjectivity analysis in personal narratives](#). *Lattice (CNRS, ENS)*, 2025.

[Statistical language modeling: from n-grams to transformers](#). *LMF (ENS Paris-Saclay)*, 2024. [[slides](#)] [[video](#)]

[Natural language processing: perspectives on emotion analysis](#). *LMF (ENS Paris-Saclay)*, 2024. [[slides](#)] [[video](#)]

[Large language models and emotional understanding](#). *Institut Jean-Nicod (EHESS, ENS Ulm)*, 2024. [[slides](#)]

[Automatic identification of emotions and their causes](#). *DATAIA*, 2022. [[slides](#)]

Student supervision

R. Faure. *Formalizing subjective experience with language models*. M2 co-supervised with A. Finkel. Mar - Aug 2025.

N. Richet. *Multimodal emotion analysis*. M2 co-supervised with E. Granger and M. Aslam. Mar - Jul 2024.

U. Pant. *NLP and formal methods*. 2nd year Bachelor co-supervised with A. Finkel. May - Jul 2024.

R. Hachem. *Imageability prediction in emotional narratives*. M1 co-supervised with A. Finkel. May - Sep 2023.

Additional activities and honors

35k GPU hours on Jean Zay supercomputer. 2023 - 2026.

Co-designed [Egon](#), an AI-human emotion bond installation. Exhibition at Le Bis in Paris. 2022.

Paris-Saclay University PhD Scholarship. 2022.

Artificial Intelligence for Île-de-France PhD Scholarship. 2022.

Attended Oxford Machine Learning Summer School. 2022. 5% acceptance.

Maintainer of [gustavecortal.com](#), showcasing my photo, poems, live music, vision models, how I memorized one thousand π digits, and other things I like to explore in my free time.