

Gustave Cortal

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I'm a third-year PhD student in Natural Language Processing (NLP) at Laboratoire des Méthodes Formelles (ENS Paris-Saclay). My research interests are NLP fundamentals, subjective analysis, and the philosophy of mind, language, and technology.

Education

École Normale Supérieure Paris-Saclay

Ph.D. student in NLP for emotion analysis. Advisors: A. Finkel, P. Paroubek and L. Ye.

Paris, France

2022 - Now

University of Technology of Compiègne (UTC)

Master's degree in data science and artificial intelligence. GPA: 4.6/5

Compiègne, France

2017 - 2022

- 6-month part-time research project on HTML embeddings with a ML researcher at Dashlane (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 Intern, Callyope

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

Paris, France

Mar - Sep 2025

- Developed bottom-up and top-down clustering approaches for mental health texts.
- Performed prompt optimization for finding linguistic commonalities and differences between groups of patients.

Research Scientist Intern, École Normale Supérieure Paris-Saclay

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

Paris, France

Feb - Jul 2022

- Performed aspect-based emotion identification on narrative texts.
- Designed a representation system for visualizing the structure of emotional expressions.

Research Scientist Intern, Makezu

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

Paris, France

Sep - Feb 2021

- Trained language models for trend analysis and user profiling on social media.

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

Student supervision

R. Faure. *Formalizing subjective experience with language models*. M2 co-supervised with A. Finkel. Mar - Aug 2024.

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.

Peer-reviewed publications

★ International conference ▲ National conference ■ National journal ◇ Pre-print

◇ G. Cortal and A. Finkel. 2025. Formalizing Style in Personal Narratives.

★ N. Richet, S. Belharbi, H. Aslam, M. Schadt, M. González-González, **G. Cortal**, A. Koerich, M. Pedersoli, A. Finkel, S. Bacon, E. Granger. Sep 30, 2024. [Textualized and Feature-based Models for Compound Multimodal Emotion Recognition in the Wild](#). In *Proceedings of the 7th Workshop and Competition on Affective Behavior Analysis in-the-wild (ABAW)*, Milan, Italy. European Conference on Computer Vision (ECCV). *Our models achieved third place in the competition*.

★ **G. Cortal** and C. Bonard. Aug 11-16, 2024. [Improving Language Models for Emotion Analysis: Insights from Cognitive Science](#). In *Proceedings of the Workshop on Cognitive Modeling and Computational Linguistics*, pages 264–277, Bangkok, Thailand. Association for Computational Linguistics.

▲ **G. Cortal** and C. Bonard. Jul 8-12, 2024. [Améliorer les modèles de langue pour l'analyse des émotions : perspectives venant des sciences cognitives](#). In *Actes de la 31ème Conférence sur le Traitement Automatique des Langues Naturelles, volume 1 : articles longs et prises de position*, pages 307–322, Toulouse, France. ATALA and AFPC. [poster](#).

★ **G. Cortal**. May 20-25, 2024. [Sequence-to-Sequence Language Models for Character and Emotion Detection in Dream Narratives](#). In *Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024)*, pages 14717–14728, Torino, Italy. ELRA and ICCL. [slides](#). [video](#). 20% acceptance.

★ **G. Cortal**, A. Finkel, P. Paroubek, L. Ye. Mar 17-22, 2024. [Emotion Recognition based on Psychological Components in Guided Narratives for Emotion Regulation](#). In *Proceedings of the 7th Joint SIGHUM Workshop on Computational Linguistics for Cultural Heritage, Social Sciences, Humanities and Literature*, pages 72–81, Dubrovnik, Croatia. Association for Computational Linguistics. [slides](#). [video](#). 43% acceptance.

■ **G. Cortal**. Mar 2024. [Automatisation du codage des personnages et de leurs émotions dans les récits de rêves avec des modèles de langue \[Sequence-to-Sequence Language Models for Character and Emotion Detection in Dream Narratives\]](#). In *Traitement Automatique des Langues, Volume 65, Numéro 1 : Varia*, pages 11-35, France. ATALA.

★ **G. Cortal**, A. Finkel, P. Paroubek, L. Ye. Sep 6-7, 2022. [Natural Language Processing for Cognitive Analysis of Emotions. Semantics, Memory, and Emotion](#), Paris, France. [poster](#). [slides](#).

Invited talks

[Statistical language modeling: from n-grams to transformers](#). Tutorial for *Formal Methods and Artificial Intelligence working group of Laboratoire Méthodes Formelles (ENS Paris-Saclay)*. [slides](#). [video](#). May, 2024.

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

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

[Automatic Identification of emotions and their causes in texts](#). *Doctoral Students Day 2nd edition (DATAIA)*. [slides](#). Dec, 2022.

Selected open-source projects

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

[10k real & generated dreams](#) using [Oneirogen](#), a language model for dream generation (+700 downloads). 2024.

[27k dream narratives](#) with emotion and character labels generated with [Dream-T5](#) (+1700 downloads). 2023.

French language models for [emotion component prediction](#) and [discrete emotion prediction](#) (+1000 downloads). 2022.

[Low-Rank Adaptation fine-tuning notebook](#) (+60 ★). One of the first implementations of LoRA. 2022.

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.