

# Maës Eliot

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## Education

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### Aix-Marseille Université

PhD in Computer Science

**Research topic:** Multimodal Learning for information transfer modeling in natural conversation

Sept 2021 - August 2025

Marseille, France

### Aix-Marseille Université

MSc in Cognitive Science

• Curriculum focus: Language, Brain and Cognition

• **Courses:** Deep Learning, Natural Language Processing, Neuroscience, Psychology, Language acquisition in children

Sept 2019 - June 2021

Marseille, France

### École Centrale de Lille

Master's degree in General Engineering

• **Major:** Decision & Data Analysis; **Minor:** Research

• **Courses:** Programming (C, Java, Matlab, Python, R), Databases, Probabilities, Prediction Models, Systems and networks, Onboard electronics, Thermodynamics, Mechanical Engineering

• Strongly involved in the Rezoleo student association, which acted as an ISP (along with managing other internet-related services) in the Centrale student accommodation

Sept 2014 - Sept 2017

Villeneuve d'Ascq, France

### Lycée Saint Louis

CPGE, MP\*- Info

Sept 2012 - June 2014

Paris, France

## Research Experience

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### TALEP, Laboratoire d'Informatique et des Systèmes (LIS)

PhD Research: Multimodal Learning for information transfer modeling in natural conversation

Sept 2021 - Aug 2025

Marseille, France

• Development of methods using NLP models to predict the location of information important to the building of mutual understanding in natural conversation, later generalised to multimodal data

• BrainKT corpus acquisition: Multimodal (audio, video, EEG) collection and annotation

### Laboratoire Parole et Langage (LPL)

Multimodal prediction of turn-taking in natural conversation

Comparison of LSTM vs Transformer models performances for turn taking prediction on the Decoda corpus

Febr 2021 - June 2021

Aix en Provence, France

### TALEP, Laboratoire d'Informatique et des Systèmes (LIS)

Analysis and Automatic Prediction of Speech Acts on Parent-Child corpora from the CHILDES databank

• Development of several predictive models (statistical models, CRF, LSTM) and comparison of models performances

• Analysis of annotated vs predicted labels on several corpora

June 2020 - Sept 2020

Marseille, France

### Institut de Neurosciences de la Timone

Neurolinguistic Study of Human-Robot Communications

• (Part Time) Neurolinguistic study of dyadic conversations (Human/Human and Human/Robot) collected through the PhysSocial study

• Automation of computation of several linguistic features and analysis across conditions

• Analysis of fMRI data with regard to those features

Nov 2019 - June 2020

Marseille, France

### Doshisha University

Design of procedures for sample selection around a decision boundary

• Applied research on a project developing new methods for model selection in Machine Learning Classification tasks

• Development of a Python library for boundary classification plotting, extending scikit-learn modules

June 2017 - Sept 2017

Kyoto, Japan

### Centre de Recherche en Informatique, Signal et Automatique de Lille (CRISTAL)

Exploration of Color Steganalysis Methods

Feb 2016 - May 2016

Villeneuve d'Ascq, France

# Publications

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## CONFERENCE PROCEEDINGS

Locating strongly informative utterances in conversation using multimodal cues

Eliot Maës, Leonor Becerra-Bonache, Philippe Blache

CogSci 2025, 2025

Did You Get It? A Zero-Shot Approach To Locate Information Transfers In Conversations

Eliot Maës, Hossam Boudraa, Philippe Blache, Leonor Becerra-Bonache

Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024), 2024

Studying common ground instantiation using audio, video and brain behaviours: the BrainKT corpus

Eliot Maës, Thierry Legou, Leonor Becerra, Philippe Blache

Proceedings of the 14th International Conference on Recent Advances in Natural Language Processing, 2023

The Badalona Corpus An Audio, Video and Neuro-Physiological Conversational Dataset

Philippe Blache, Salomé Antoine, Dorina De Jong, Lena-Marie Huttner, Emilia Kerr, Thierry Legou, Eliot Maës, Clément François

Language Resources and Evaluation Conference, 2022

Shared knowledge in natural conversations: can entropy metrics shed light on information transfers?

Eliot Maës, Philippe Blache, Leonor Becerra-Bonache

26th Conference on Computational Natural Language Learning (CoNLL), 2022

Large-scale study of speech acts' development using automatic labelling

Mitja Nikolaus, Juliette Maes, Jeremy Auguste, Laurent Prevot, Abdellah Fourtassi

Proceedings of the Annual Meeting of the Cognitive Science Society, 2021

Modeling speech act development in early childhood: the role of frequency and linguistic cues

Mitja Nikolaus, Juliette Maes, Abdellah Fourtassi

Proceedings of the Annual Meeting of the Cognitive Science Society, 2021

A class boundary selection criterion for classification

David Ha, Juliette Maes, Yuya Tomotoshi, Charles Melle, Hideyuki Watanabe, Shigeru Katagiri, Miho Ohsaki

Proceedings of IPSJ Kansai-Branch Convention 2017, 2017

## JOURNAL ARTICLES

Large-scale study of speech acts' development in early childhood

Mitja Nikolaus, Eliot Maes, Jeremy Auguste, Laurent Prévot, Abdellah Fourtassi

Language Development Research pp. 268–304. 2022

Comparaison linguistique et neuro-physiologique de conversations humain humain et humain robot

Charlie Hallart, Juliette Maes, Nicolas Spatola, Laurent Prévot, Thierry Chaminade

Revue TAL: traitement automatique des langues pp. 69–93. 2021

A Classification-Uncertainty-Based Criterion for Classification Boundary Selection

David Ha, Juliette Maes, Yuya Tomotoshi, Hideyuki Watanabe, Shigeru Katagiri, Miho Osaki

IEICE Technical Report; IEICE Tech. Rep. pp. 121–126. IEICE, 2018

# Professional Experience

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## CapGemini

Data Consultant

Jan 2018 - Aug 2019

Lille, France

- *Innovation Lab*: NLP analysis of RSS feeds to add trends prediction to a fashion chatbot
- *Kiabi*: Dashboard development with Tableau; Prediction algorithms development (prediction, among others, of customer churn); Image Segmentation for clothing retrieval in images
- *Data Science Community*: promotion of data science projects on-site, events organisation

## Wavestone

IT Consultant, Intern

May 2016 - Sept 2016

Paris, France

Wavestone IT System Department, ERP Upgrade Project, QA engineering team

# Teaching Experience

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Classes were taught at Aix-Marseille University (AMU) in the Computer Science and Mathematics departments, covering a range of programming and data science topics. The teaching roles included lectures, tutorials, and project supervision for both undergraduate and graduate students.

Period	Uni	Program	Level	Course	Role
Spring 2025	AMU	BSc Maths	L1	Python (Object-Oriented Programming)	Lecturer / Tutor
Spring 2025	AMU	BSc CS	L3	Data Visualization	Lecturer / Tutor
Winter 2025	AMU	BSc CS	L2	Web Development (HTML, CSS, JS, Flask)	Tutor / Supervisor
Winter 2025	AMU	BSc CS	L1	Java (Introductory Courses)	Tutor
Fall 2023	AMU	MSc AI	M2	Multimodal Learning	Project Supervisor
2022-2023	AMU	BSc CS	L1	Python (Student Projects)	Project Supervisor
2021-2024	AMU	BSc CS	L1	Python (Introductory Courses)	Tutor

## Skills

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### Programming

Python (Pandas, PyTorch, NumPy, Scikit-learn, HuggingFace, Transformers...), R, HTML/CSS, SQL

### Miscellaneous

Linux, Shell (Bash/Zsh), L<sup>A</sup>T<sub>E</sub>X, Data Visualisation (Tableau, Plotly), REST API Design, Web Scraping, Microsoft Office, Versioning (Git), CI/CD, Docker, LLM prompting

### Soft Skills

Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation

## Languages

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### French

Native proficiency

### English

Fluent

### Japanese

Conversational

### German

Conversational