

MARION FECHINO

DATA SCIENTIST | DATA ANALYST | STATISTICS |
PSYCHOMETRICS



[Blog](#)

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SKILLS

- Python (Numpy, Pandas, Scikit-learn, Keras, NLTK, spacy, gensim, word2vec, LSA, transformers (BERT/GPT), matplotlib, seaborn, vegas)
- SQL (SQLite, MySQL)
- NoSQL (ArangoDB)
- Git
- GitLab CI/CD
- R (lme4, R markdown, ordinal, lmerTest, effects, gplot)
- Statistica
- Jmp
- SPSS

EDUCATION

Master of Cognitive Psychology (with Honors)

Grenoble-Alpes University /
Phelma
2016-2018
Grenoble, France

Bachelor of Psychology (with Honors)

Grenoble-Alpes University
2013-2016
Grenoble, France

Bachelor of Biology (with Honors)

Joseph Fourier University
2013-2015
Grenoble, France

SCHOLARSHIPS

- 4-year French ministerial doctoral contract
- IFRA-SHS research stay in Germany
- CIERA mobility grant
- Erasmus + student mobility for an internship in higher education
- Bilateral agreement between Université Joseph Fourier and Université de Montréal, QC, for an academic exchange year in the Bachelor of Biology program

ACADEMIC PUBLICATIONS

Scientific Paper, Journal of Eye Movement Research, 2020. *Following in Jakobson and Lévi-Strauss' footsteps: a neurocognitive poetics investigation of eye movements during the reading of Baudelaire's 'Les Chats'.*

Conference talk - ECEM 2019, Alicante

PROFESSIONAL EXPERIENCE

Assistant project manager | Work sabbatical

EcoWaterLab Solutions
December 2022 | May 2023 - current / Montreal, QC

- Automatisation and project development
- Became a mum and was on maternity leave
- Learned different **machine-learning techniques** to complete my knowledge since 2022 on **LLM**, **transformers**, and also trained myself in **Keras**, **SQL databases**, and **AI generators**
- Engineered a suite of personalized projects tailored to streamline budget planning and real estate research for personal projects

PhD Candidate

LPC & LIS, Aix-Marseille University
Freie Universität Berlin

October 2018-July 2022 / Marseille, France & Berlin, Germany

- Reviewed the current state of the art in metaphor reception, poetic reception, and cognitive perception of aesthetics and art (deepening my former research work on poetry reading)
- Created **tools for French NLP analysis**, which did not exist to calculate different metrics such as **sentiment analysis**, **topic analysis**, aesthetic potential, sonority score...
- Curated a comprehensive **corpus** of French poetry and literature by systematically scraping multiple websites, resulting in the compilation of **5000 books**. This corpus was the foundation for developing a sophisticated **vector space model** for French literature, showcasing my expertise in data acquisition, processing, and applying advanced natural language processing techniques in academic research.
- Designed, deployed, and managed **three online surveys** on a dedicated server infrastructure, facilitating robust data collection from a cohort of **1500 participants**
- Explore how poetic context impacts metaphor aesthetic potential and comprehension through textual metrics analysis, comparing models to identify key features influencing both aspects.
- Developed a **gpt3-based poetry generator**

University teacher assistant for Psychology Bachelor

Aix-Marseille University
October 2018-July 2019 / Marseille, France

- Taught **statistic** applied course for 150 students
- Supervised student projects for university methodology for 40 students
- Monitored final exams for 500 students and corrected final exams for statistics and university methodology projects

Research engineer

Freie Universität Berlin
January 2018 to June 2018 / Berlin, Germany

- Reviewed the current state of the art in poetics, literature reception, and cognitive perception of aesthetic and art
- Created an experimental design, collected data with participants' eye movements
- Analyzed the results of reading behavior of a poem visually presented in two different patterns using **advanced statistics**
- Developed the tools in French to **analyze poetic metrics**

Research engineer

LPNC, Grenoble Alpes University
January 2017-June 2017 / Grenoble, France

- Reviewed of the current state of the art in language tasks in fMRI
- Pre-treated and cleaned a dataset of fMRI sessions using spm12 on Matlab
- Analyzed the results of correlations between defined regions of interest activated during a language task and how it differs for epileptic subjects
- Discussed how these results could be applied or enhanced for clinical use, plus what could be done to be able to apply the protocol in a clinical prospect

PROJECTS

- Designed and implemented an **advanced investment planning model** integrating sophisticated **time series forecasting** techniques
- Conducted comprehensive **analysis and mapping of the Montreal real estate** market to determine optimal price ranges and boroughs based on various factors, including property prices, housing types, sizes, parking availability, rental potential, and resale value.
- Implemented an **image-based machine learning model** integrated within a drone to enhance forest fire detection capabilities