# Jules Bangard

## PhD Candidate | Machine Learning Scientist

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github.com/JulesBa-Git
bangard.xyz

## SOFTWARE PROJECTS

**emcAdr:** R/C++ Package distributed on CRAN
**treeHunt:** R/C++ package available on GitHub

## GENERAL SKILLS

Programming:
Python (Scikit-learn, PyTorch, PySpark), R, C/C++, Java, SQL
Machine Learning:
Deep Learning (Transformers, Geometric Deep Learning), Monte Carlo Methods (e.g., MCMC), NLP, Statistical Modeling, Time-to-event data
High-Performance Computing:
OpenMP, MPI, CUDA
Others:
Git, Shell/Bash, LaTeX, Streamlit, Hadoop

## LANGUAGES

French: Mother tongue
English: Fluent
German: Beginner
Polish: Beginner

## COURSEWORK

Statistics & Linear Algebra
Advanced Algorithms
Data Analysis
Machine Learning
Natural Language Processing

04.22.2026

## PUBLICATION

**Bangard et al.** Detecting adverse high-order drug combinations from individual case safety reports using computational statistics on disproportionality measures, 2025

## EDUCATION

**Université de Strasbourg** 2023 - present
3rd-year PhD Candidate in Statistics Strasbourg

**Université de Strasbourg** 2021 - 2023
Master's degree in Data Science and Complex Systems Strasbourg
With honours

**Université de Haute-Alsace** 2018 - 2021
Bachelor's degree in Computer Science Mulhouse
With honours Rank 1/35

## EXPERIENCES

**Université de Strasbourg, IRMA Laboratory** February 2023 - present
Subject: Statistical algorithms for the detection of adverse reactions from drug cocktails
Designed and implemented an efficient C++ algorithm for detecting high-risk drug combinations in FAERS dataset (+ 1.6 Milion patients). The method integrates Monte Carlo Markov Chain sampling with a genetic optimization algorithm. Distributed as the CRAN R package emcAdr, with 300+ monthly downloads.

**Deep learning for the linguistic description of images**
Implementation of a deep neural network enabling the description of images in natural language.

- Produced a state-of-the-art report.
- Developed a deep understanding of transformer architectures.
- Deployed the model on a website, allowing simple and fast user interaction.

**Infosat** May 2021 - August 2021
Software Engineer Intern
Developed software and managed language migration.

- Worked in a large team of software engineers.