

# SAMER MAKNI

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samermakni.github.io

Antwerp, Belgium

## EDUCATION

- Ph.D. Computer Science**, University of Antwerp, Faculty of Science Present  
• Thesis Title: Artificial Intelligence to Uncover Patterns in Mass Spectrometry Data Across Repositories. Supervised by [Wout Bittremieux](#).
- M.S. Computer Science**, Óbuda University, John von Neumann Faculty of Informatics June 2025  
• Graduated with the qualification: excellent with highest honours  
• Thesis Title: Time Series Prediction for the European Electricity Market. Supervised by [Ferenc Béres](#).
- B.S. Computer Science**, University of Tunis El Manar, Faculty of Sciences of Tunis May 2023  
• Graduated with high honors (Mention Très Bien).  
• Thesis Title: Harnessing Data Encoding Towards Optimizing Machine Learning Algorithms in the Drug Discovery. Supervised by [Emna Harigua-Souiai](#).

## EXPERIENCE

- Doctoral Researcher**, University of Antwerp, Bittremieux Lab Sep. 2025 - Present  
• Research focused on applying AI to uncover patterns in mass spectrometry data across large repositories.
- Junior Researcher**, SZTAKI, Institute for Computer Science and Control Feb. 2024 - Aug. 2025  
• Working on multiple machine learning industry projects.  
• Conducting research on geometric deep learning with a focus on explainability.  
• Developed a visualization tool for historical medical data of Hungarian citizens.
- Research Intern**, BIND Research Group, Institut Pasteur Feb. - Sep. 2023  
• Preprocessed and analysed large molecular data for usage in ML models.  
• Developed pipeline for training and comparing various ML and DL models for drug discovery.
- Python Developer**, Fabskill | Part-time Dec. 2022 - Aug. 2023  
• Developed Flask and FastAPI APIs for NLP tasks.  
• Worked with vector databases and NLP techniques using word2vec, fasttext, and SBERT.

## PROJECTS

- TimeKAN** | [samermakni.github.io/timekan/](https://samermakni.github.io/timekan/) Feb. 2025  
• A Python library integrating Kolmogorov-Arnold Networks with recurrent architectures.  
• Added support for various types of basis functions for KAN layers .
- CidalsDB** | [cidalsdb.streamlit.app](https://cidalsdb.streamlit.app) Aug. 2023  
• Implemented a classifier using mainly GCN and RandomForest to predict molecule activity for different pathogens.  
• Created an interface that offers predictions and molecular search based on chemical similarity.

## CERTIFICATIONS

- IELTS Academic C1 Proficient User**, British Council Mar. 2023
- Mathematics For Machine Learning**, Imperial College London Dec. 2022

## COMPETENCES

**Languages** English (*Proficient*), French (*Proficient*), Arabic (*Proficient*), Tunisian Arabic (*Native*)

**Technologies** Python, SQL (Postgres/MySQL), Git, Bash, Rust,  $\LaTeX$

**Libraries** PyTorch, Pytorch Geometric, Pandas, Scikitlearn, Selenium, Beautiful Soup, DeepChem, RDKit.

## PUBLICATIONS & POSTERS

- [1] Harigua-Souiai, E., Masmoudi, O., Makni, S. et al. cidalsDB: an AI-empowered platform for anti-pathogen therapeutics research. *Journal of Cheminformatics*, <https://doi.org/10.1186/s13321-024-00929-7>
- [2] Makni, S., Masmoudi, O., Doggaz, N, Harigua-Souiai, E. Harnessing Data Encoding Towards Optimizing Machine Learning Algorithms in the Drug Discovery. In: *3rd Colloque Jeunes Chercheurs*, Tunis, Tunisia, 2023. [Accessible Here](#)