

# Guilhem Fouilhé, PhD student in AI

✉ g.g.a.fouilhe@gmail.com

☎ 06.46.49.44.93



## Education

- 2023 – ... **PhD student in Computer Science, IRIT / ANITI**  
Mainly on XAI and interpretability of LLM and AI planning systems. Member of the european project TUPLES
- 2022 – 2023 **Master's degree in Computer Science and Mathematics, Université Paul Sabatier Toulouse 3** Curriculum : Interactions of Mathematics and Computer Science for AI.  
*2 times Laureate of an ANITI Master Fellowship, Head of the class*
- 2017 – 2021 **Bachelor in Mathematics, Université de Montpellier**  
First two years in a double degree (Mathematics and Physics)


## Internships

- 2023 (6 months) **Research internship, IRT Saint Exupéry** supervised by David Vigouroux and Agustin Picard.  
Topic : *Influence functions for global explainability of Deep Neural Networks.*
- 2022 (3 months) **Research internship, CerCo-CNRS** supervised by Grégory Faye and Rufin Van-Rullen, funded by ANITI.  
Topic : *Mathematical Models for Predictive Coding in Vision.*  
Theoretical and applied study of stability of Predictive Coding Deep Neural Networks (Pytorch, Python ...).  
*Led to the publication of [3]*
- 2021 (2 months) **Intensive research internship, IMT - Toulouse Mathematics Institute** supervised by Grégory Faye and Christophe Besse, funded by CIMI Toulouse.  
Topic : *Sharp thresholds for bistable reaction-diffusion equations.*  
Theoretical and numerical study of asymptotic behavior.  
*Led to the publication of [4]*

## Projects


- 2022 **Academic project, IRIT** supervised by Chloé Braud  
Topic : Identifying linguistic markers of dementia.  
Writing of a state-of-the-art and development of predictive models.
- 2021-2022 **Initiation to Research Essay, CerCo-CNRS/ANITI** supervised by Andrea Alamia.  
Topic : Predictive Coding in Deep Neural Networks.  
Writing of a state-of-the-art.
- 2021 **Research project, Institut Montpellierain Alexandre Grothendieck**  
Development of visualisation tools for a Pl@ntNet dataset.


## Other Employment


2017 – . . . .  **Various seasonal/student jobs** Vaccination center of Toulouse, COVID-19 tests megadrive, packaging and handling, renovation, babysittings, wine harvest ...

## Personal experiences and responsibilities


### Student Association


2019 - 2020  **Association Générale des Etudiants Montpelliérains**, President.  
*Local federation of student associations. Gap year for this mandate.*


2018 - 2019  **Association Générale des Etudiants Montpelliérains**, Mission Head representation of students.

2017 - 2018  **BDE Sciences Montpellier**, Vice-President in charge of representation of students and network.






### Institutional mandates

2020 - 2021  **Elected student** at the CROUS de Montpellier-Occitanie.

2019 - 2021  **Elected student** in the CFVU de l'Université de Montpellier.






2018 - 2021  **Elected student** in the council of the faculty of sciences of Montpellier.

## Skills

Languages	 Fluent in English, native in french, notions of Russian.
Coding	 Python, C++, C, Javascript/Typescript, R, Julia, Matlab, OCaml, SQL, Git, Java, Docker, bash, $\text{\LaTeX}$ , ...
Data Science	 Numpy, Scipy, Matplotlib/Seaborn, Pandas, <b>Pytorch</b> , <b>Tensorflow/Keras</b> , scikit-learn, scikit-image, nltk, spacy, <b>Hugging Face datasets/transformers/TRL/...</b> , Django, Pygame ...
Web Development	 Some experience with TypeScript, Angular, Apache, OpenAI API, Vercel AI SDK.
Misc.	 Academic research, rigor, autonomy, scientific method, innovation spirit, teamwork in a multicultural environment, team management, clear written and oral presentations of technical concepts, ...

## Publications

### Journal Articles

-  **Fouilhé, G.**, Eifler, R., Thiébaux, S., & Asher, N. (2025). Conversational goal-conflict explanations in planning via multi-agent llms. *Workshop on Planning in the Era of LLMs (LM4Plan @ AAAI 2025)*.
-  Naim, O., **Fouilhé, G.**, & Asher, N. (2024). Re-examining learning linear functions in context. *arXiv preprint arXiv:2411.11465*.
-  Faye, G., **Fouilhé, G.**, & VanRullen, R. (2023). Mathematical derivation of wave propagation properties in hierarchical neural networks with predictive coding feedback dynamics. *Bulletin of Mathematical Biology*, 85(9), 80.
-  Besse, C., Capel, A., Faye, G., & **Fouilhé, G.** (2022). Asymptotic behavior of nonlocal bistable reaction-diffusion equations. *Discrete and Continuous Dynamical Systems - B*, 0-0.  
 doi:10.3934/dcdsb.2022211