

PhD Position Available – Reasoning Diffusion in Large Language Models

PhD Opportunity in AI & Deep Learning

 **Location:** [IMT Atlantique](#), France, Campus of Brest 

 **Main Advisor:** [Prof. Vincent Gripon](#) (Directeur de Recherche)





 **Team:** [BRAIn](#) (BRoader Artificial Intelligence)

Research Topic: Reasoning Diffusion in LLMs





Large Language Models (LLMs) have demonstrated impressive capabilities in natural language understanding and generation, but they still face challenges in structured reasoning, logical inference, and other specialized tasks. This PhD will focus on developing novel methodologies to enhance the reasoning abilities of LLMs using **diffusion-based techniques**, with potential applications in explainability, robustness, and knowledge transfer.

Note that the subject is open to discussions, as the funding is already guaranteed. So feel free to contact us to discuss the topic if you wish.





Key Research Directions:

-  Developing novel reasoning paradigms for LLMs
-  Investigating diffusion-based approaches
-  Enhancing interpretability and efficiency in LLM architectures
-  Evaluating models on complex reasoning tasks

Required Skills:





-  Strong background in machine learning & deep learning
-  Experience with NLP and LLMs (e.g., Transformers, GPT)
-  Proficiency in Python and ML frameworks (PyTorch)
-  Strong analytical and problem-solving skills


What We Offer:


-  A dynamic research environment at **IMT Atlantique**
-  Collaboration with leading experts in AI & ML, in top universities and companies,
-  Access to cutting-edge computational resources, through the GENCI
-  Opportunities for publications in top-tier conferences

 **How to Apply:**

Interested candidates should send:

-  A CV
-  A motivation letter
-  Academic transcripts
-  (Optional) A sample of previous work/publications

 **Contact:** Prof. Vincent Gripon – vincent.gripon@imt-atlantique.fr

 **Application Deadline:** Please contact as soon as possible, the agenda is not strictly fixed

Join us to shape the future of reasoning in AI! 