REGROUPEMENT 3 – CALL FOR PARTICIPATION

The Regroupement 3, whose overall objective[1] is to improve the adaptability, reliability and robustness of large model languages (GMLs), **is opening a call for participation to fund a maximum of four projects, each project up to a maximum of $ 25,000 for one year**.

Eligible projects must fall within one of the Regroupement 3's five themes.

THEMES

Theme 1: LLM Adaptation and Robustness. Although large language models (LLMs) are generalist agents capable of solving several tasks, they are often deployed in new domains for new tasks. Adapting an LLM to this new domain quickly becomes important. However, fine-tuning on the new domain may not always be feasible. This theme will investigate retrieval-augmented domain adaptation and cultural adaptation for LLMs and VLMs.

Theme 2: Modular LLMs. LLMs/Vision-language models (VLMs) can be considered as generalist experts or task-oriented experts, specialized towards some modalities (language, images, videos). However, they are often presented as monolithic models, that are hard to adapt or integrate, or that do not allow for an easy decomposition of reasoning processes into tasks, sub-tasks, modules or knowledge components. Thus, one current challenge is to create modular designs for LLMs able to exploit task-specific agents, APIs, modules, data points and other models and create reusable and interpretable architectures. This theme focuses on composition, inference, and learning methods for exploiting modularity in LLMs.

Theme 3: Non-parametric LLMs/VLMs. One significant component in LLMs success is the knowledge encoded in their weights. However, this parametric knowledge also contributes to the adaptation challenges of LLMs and to their non-modularity as highlighted in the two previous points, as parametric knowledge leads to hallucinations, inaccurate and outdated

[1] For specific objectives and more details on the cluster, visit the IVADO website: https://ivado.ca/en/regroupements/natural-language-processing-npl/

knowledge, hardly interpretable results and the need to periodically retrain models on new domains and tasks. This theme explores how non-parametric memories based on knowledge bases (KBs) can be designed and leveraged to provide up-to-date knowledge, knowledge searching, editing and caching capabilities, knowledge aggregation capabilities for tasks that require a combination of knowledge from various sources and interpretability mechanisms for LLMs.

Theme 4: LLM Interpretability and Safety. One of the main reasons for creating modular multi-agent architectures with external memories is to be able to improve the interpretability of the results and the safety of LLMs and provide a human-computer interface that increases the confidence of the general public towards AI-based models. This theme improves the interpretability and trustworthiness of machine learning models and design novel interpretability methods for machine learning systems.

Theme 5: Indigenous and Low Resources Languages. LLM technologies have been limited to English and several well-resourced languages. For Indigenous, endangered, and lower-resource (IEL) languages, LLMs either do not exist or show lesser performance. Further, non-standard or non-prestige language varieties are often deprioritized and neglected. This theme explores low-resource techniques and methodologies for processing language varieties, and develops collaborative generative databases for understudied languages to promote linguistic diversity and prevent language varieties from being erased.

FUNDING

The maximum amount allocated per project is $25,000 for one year. This amount is non-renewable.

ELIGIBILITY CRITERIA

- The principal investigator must not be a member of one of the IVADO's regroupements
- The principal investigator must be a professor at a University in Québec

- Funding will support a project related to one or more of Regroupement 3's themes
- The project must be different from existing Regroupement 3's research projects

IMPORTANT DATES

- **Submission deadline**: August 15, 2025
- **Notification of results**: September 20, 2025
- **Project start date**: October 1, 2025

SUBMISSION

Applications must contain the following elements:

- Description of research project (max 2 pages): context, objectives, team, budget justification, anticipated benefits, timetable, EDI considerations
- CVs of researchers
- CVs of students and postdocs

Applications should be submitted by email to Danielle Maia de Souza, by August 15, 2025, 11:59 PM.

CONTACT

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