

INTERNATIONAL RELATIONS



INTERNSHIP SUBJECT

2900 - Towards Self-Adapting Language Models

Objectives

This internship aims to reimplement the core components of the **SEAL (Self-Adapting Language Models)** framework, introduced by Zweiger et al. (2025) in [1], for a medium-sized open-source language model (1-7B parameters). The goal is to enable the model to **generate, apply, and learn from its own synthetic finetuning data** in a self-directed and reinforcement-learning-driven loop.

The successful implementation will allow the model to incorporate new knowledge or adapt to novel tasks without relying on external supervision or manual dataset curation.

<https://arxiv.org/abs/2506.10943>

Large Language Models (LLMs) typically require significant manual intervention and curated data to adapt post-pretraining. SEAL proposes a promising alternative: using the model's own generative capabilities to define its learning process via *self-edits*, namely synthetic data and update directives it creates for itself.

This approach has implications for continual learning, low-resource adaptation, and autonomous agents. However, no open-source implementation currently exists. Reproducing SEAL for a 1-7B model would validate its practicality and pave the way for more adaptable language models.

Required Skills

- Strong knowledge of Python and Unix environment.
 - Familiarity with the HuggingFace's Transformer library, Reinforcement learning framework.
 - a willingness to go beyond benchmarks and look at the data
 - a strong experimental thoroughness.

Note: this internship is primarily targetting excellent candidates at the Master 2 level but all strong applications will be considered (M1 and PhD student)

General Information

- **Research Theme** : Language, Speech and Audio
- **Locality** : Paris
- **Level** : Master
- **Period** : 1st January 2026 -> 31st March 2026 (3 months)

⚠ *These are approximative dates. Please contact the training supervisor to know the precise period.*

- **Deadline to apply** : 1st July 2025 (midnight)

Contacts

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More information

- **Inria Team** : ALMANACH
- **Inria Center** : Centre Inria de Paris