ISTEX ou la fouille de texte basée sur l'IA

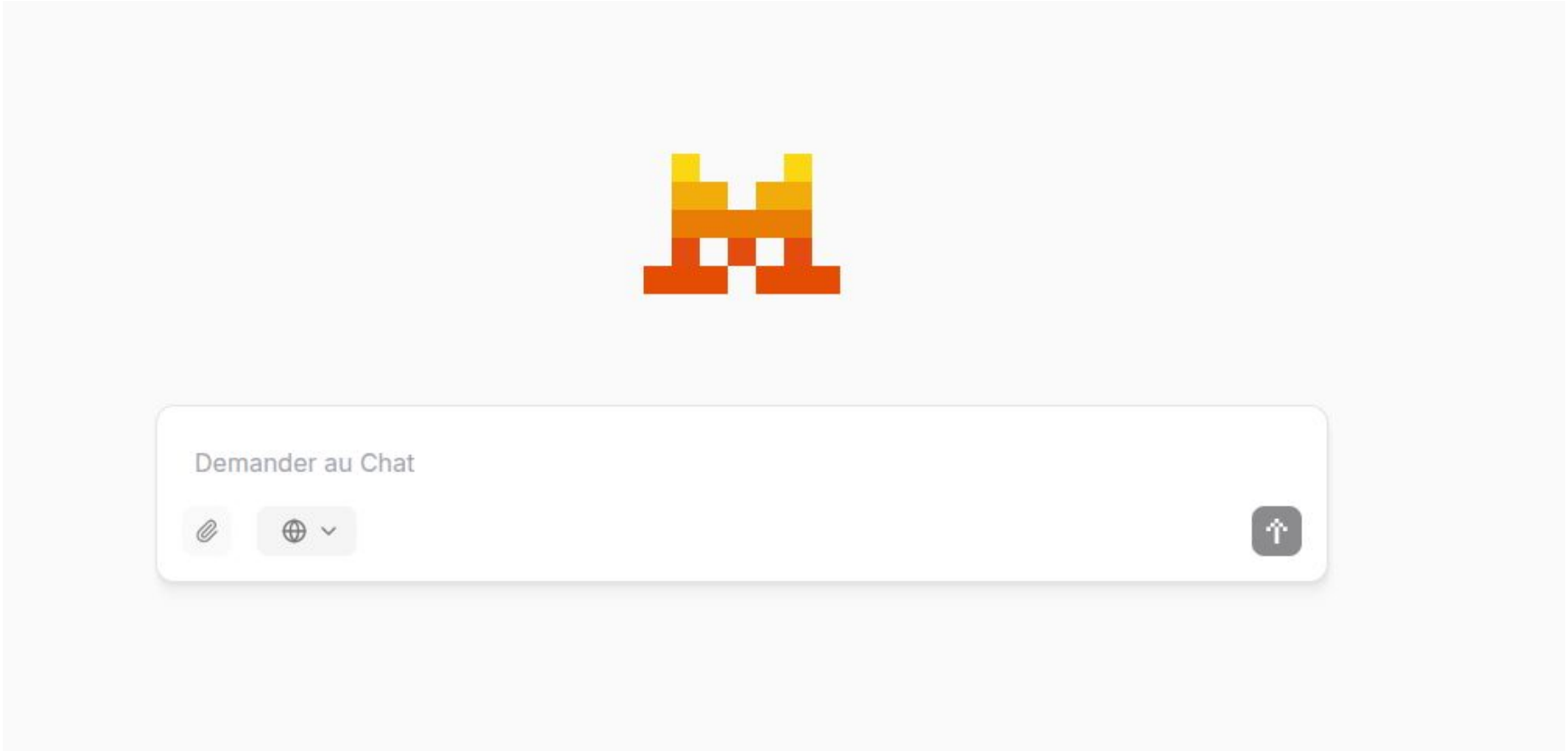
Mathdoc : 30 années au service de la communauté mathématique

15 octobre 2025

cnrs Inist

Nicolas Thouvenin

De quelle IA parle-t-on ?


Demander au Chat

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```

Un écosystème technologique

Différentes techniques :
transformer, decoder, encoder, LLMs, etc.

Différents usages :
assistant, automate, chatbot, etc.

L’usage IA pour ISTEX

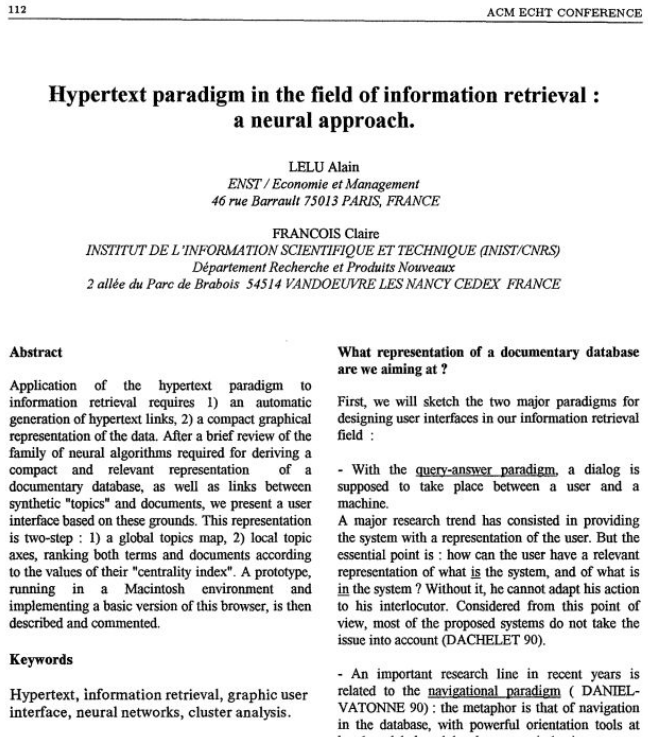
IA sur des documents scientifiques :

traiter, **enrichir** des lots de **documents numériques** pour les “valoriser” individuellement ou en corpus

Fouille de textes ou “Text and Data Mining - TDM”

Est-ce nouveau à l'Inist-CNRS ?

En 1992, des personnes de l'Inist travaillaient déjà sur l'extraction de "**topics**".



112 ACM ECHT CONFERENCE

Hypertext paradigm in the field of information retrieval : a neural approach.

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Abstract

Application of the hypertext paradigm to information retrieval requires 1) an automatic generation of hypertext links, 2) a compact graphical representation of the data. After a brief review of the family of neural algorithms required for deriving a compact and relevant representation of a documentary database, as well as links between synthetic "topics" and documents, we present a user interface based on these grounds. This representation is two-step : 1) a global topics map, 2) local topic axes, ranking both terms and documents according to the values of their "centrality index". A prototype, running in a Macintosh environment and implementing a basic version of this browser, is then described and commented.

Keywords

Hypertext, information retrieval, graphic user interface, neural networks, cluster analysis.

What representation of a documentary database are we aiming at ?

First, we will sketch the two major paradigms for designing user interfaces in our information retrieval field :

- With the query-answer paradigm, a dialog is supposed to take place between a user and a machine.
A major research trend has consisted in providing the system with a representation of the user. But the essential point is : how can the user have a relevant representation of what is the system, and of what is in the system ? Without it, he cannot adapt his action to his interlocutor. Considered from this point of view, most of the proposed systems do not take the issue into account (DACHELET 90).

- An important research line in recent years is related to the navigational paradigm (DANIEL-VATONNE 90) : the metaphor is that of navigation in the database, with powerful orientation tools at

Et ISTEX ...

Istex

Infrastructure de services pour la fouille de textes

des ressources & des services

Ressources pour la fouille de textes

Chiffres du 2/10/2025

52
Bouquets

456 823
Ouvrages & revues

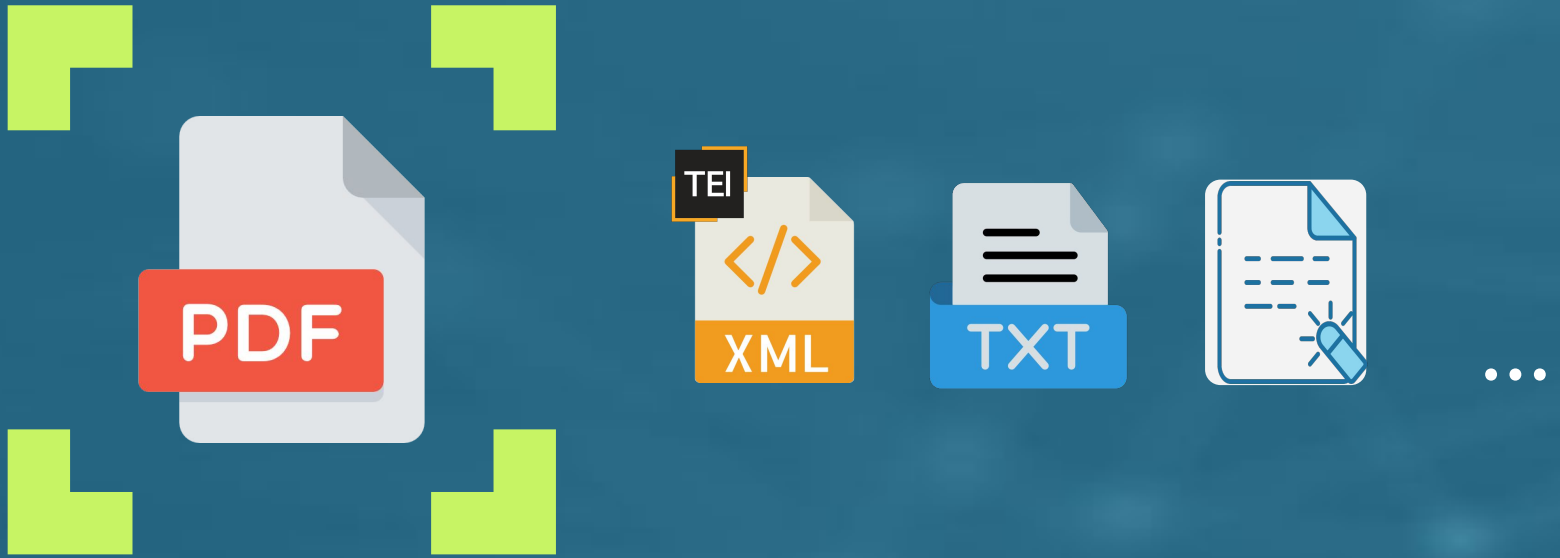
73
Terminologies

30 086 784

documents

Soit une bibliothèque avec ~14 km de rayonnage

Un document, plusieurs versions du même texte



Plus de 300 000 000 de fichiers

Des données de qualité

- Homogénéisées
- Normalisées
- Structurées
- Enrichies
- Centralisées
- Licences adaptées

Plus de temps pour créer et tester des IA

Que faire de tous ces textes…

Analyse et fouille des textes ISTEX

Document

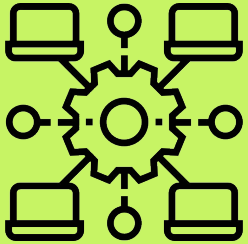
Consulter

Corpus

Télécharger

Terminologie

Appréhender



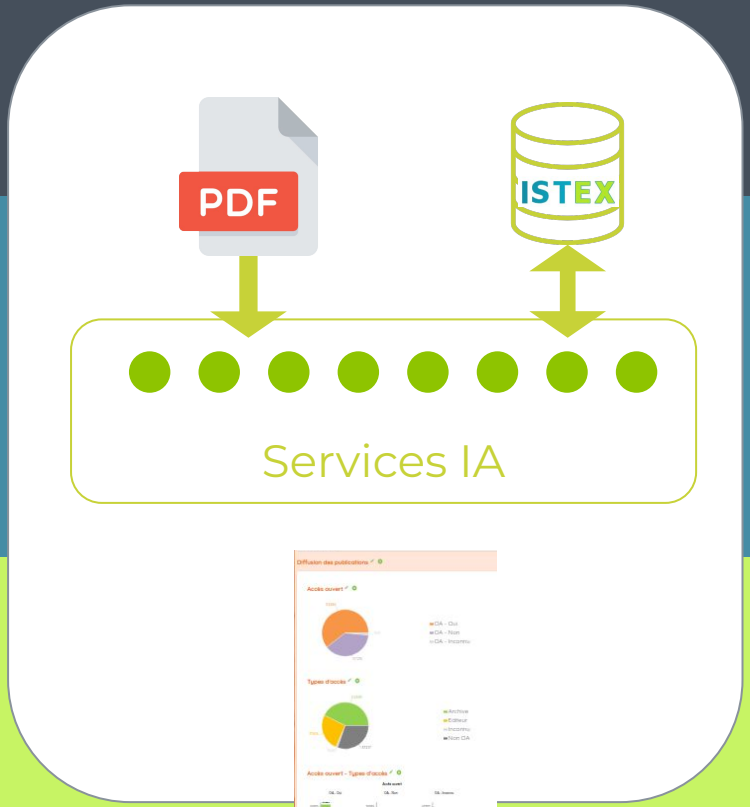
Services pour la fouille de textes

Chiffres du 2/10/2025

39
Corpus thématiques

44
Web services

106
Instances hébergées



Web services IA spécialisés

- Atomiques
- Standardisés
- Interopérables
- Ouverts
- **Évalués**
- Volatiles

Utilisables
sans connaissance
et en confiance

Que faire de tous ces traitements…

Analyse et fouille de textes hors ISTEX

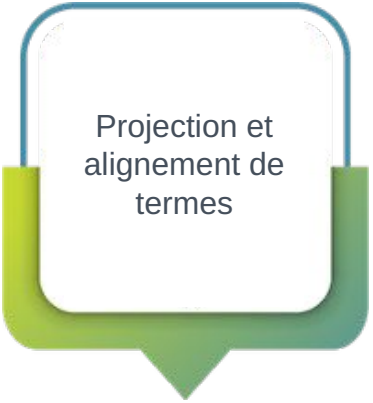
Document

Vérifier

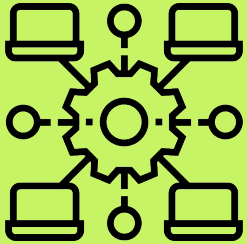
Corpus

Extraire

Terminologie



Annoter



Exemples

44

Web Services IA
pour la fouille de textes.

textSummarize - Résumé automatique d'un article scientifique

Traitement

Introduction In bibliographic databases, affiliations of authors are of paramount importance. Hence, they permit to the laboratories or institutes to get national and even international visibility, as well as they consequently provide authors with scientific caution. We cannot discuss the issue of affiliations without talking of "Shanghai ranking" which aims at evaluating universities. Our purpose here is not to feed up the controversy (Van Raan 2005) (Liu, Cheng and Liu 2005), but to point out that the management of affiliation plays an important role in the calculation of universities "performance". Moed (Moed 2005) reports some problems with author's names and also institutions: "Authors from the same institution, or even from the same department, may not indicate their institutional affiliations in the same way". Depending on the country, it is not always clear how to name a laboratory with respect to its supervisory authorities. ... (Efficient supervised and semi-supervised approaches for affiliations disambiguation, Pascal Cuxac, Jean-Charles Lamirel, Valérie Bonvallot)

⇒

In bibliographic databases, affiliations of authors are of paramount importance. The affiliation is also important information to disambiguate author names in databases. As the amount of available information increases, problem caused by misspelling, spelling difference, and name or affiliation change also become worse. This paper proposes an approach based on Bayes learning method and overlapping clustering. It is structured as follows: section 1 summarizes related works, section 2 summarizes identifies problems, section 3 describes supervised learning method, and section 4 reports experiments. Section 5 concludes and discusses future work.

aiAbstract-check - Détection de résumé scientifique généré par IA

Traitement

The Conditional Lie-Bäcklund Symmetry (CLBS) method is introduced to analyze systems of evolution equations. It is demonstrated that the ability to reduce a system of evolution equations to a system of ordinary differential equations can be entirely described by the CLBS of the given system. As an application, a specific class of two-component nonlinear diffusion equations is examined. The governing system and its corresponding CLBS are determined. Consequently, exact solutions are derived based on polynomial, exponential, trigonometric, and mixed invariant subspaces through symmetry reductions."

⇒ {"isAiGenerated": true,"score": 1}

bibCheck - Contrôle de référence bibliographique

Traitement

2. Y. B. LINHART. L. CHAOUNI-BENABDALLAH, J.-M. PARRY & J. D. THOMPSON – Selective herbivory of thyme chemotypes by a mollusk and a grasshopper	⇒	**doi**:10.3406/ecmed.1999.1879 **status**:found
3.https://doi.org/10.1016\/b978-0-323-90638-8.00002-3	⇒	**doi**:10.1016/b978-0-323-90638-8.00002-3 **status**:found
4.Gerris Caucasicus, Primary Prevention of Cardiovascular Disease with a Mediterranean Diet, 10.1056/nejmoa1200303	⇒	**doi**:10.1056/nejmoa1200303 **status**:retracted
5.Zohuri, B. (2019). A Comparison of Molten Salt Reactors to Light Water Reactors: Pros and Cons. In Molten Salt Reactors and Thorium Energy (pp. 81-98). Woodhead Publishing. https://doi.org/10.1016/B978-0-08-102337-2.00006-9	⇒	**doi**: **status**:hallucinated

Teeft - Extraction de termes d'un texte via Teeft

Traitement

Mars Exploration Rover (MER) est une mission double de la NASA lancée en 2003 et composée de deux robots mobiles ayant pour objectif d'étudier la géologie de la planète Mars, en particulier le rôle joué par l'eau dans l'histoire de la planète. Les deux astromobiles ont été lancés au début de l'été 2003 et se sont posés en janvier 2004 sur deux sites martiens susceptibles d'avoir conservé des traces de l'action de l'eau dans leur sol.Chaque rover ou astromobile, piloté par un opérateur depuis la Terre, a alors entamé un périple en utilisant une batterie d'instruments embarqués pour analyser les roches les plus intéressantes :MER-A, rebaptisé Spirit, a atterri le 3 janvier 2004 dans le cratère Gusev, une dépression de 170 kilomètres de diamètre qui a peut-être accueilli un lac ;MER-B, renommé Opportunity, s'est posé le 24 janvier 2004 sur Meridiani Planum.Chaque rover pèse environ 185 kg et se déplace sur six roues mues par l'énergie électrique fournie par des panneaux solaires ...

⇒

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TermSuite - Extraction de termes d'un corpus

Traitement

Ce web service ne traite pas des fichiers mais des corpus : ceci est un exemple de contenu d'un fichier d'un corpus

Microbiology and Nitrogen Cycle in the Benthic Sediments of a Glacial Oligotrophic Deep Andean Lake as Analog of Ancient Martian Lake-Beds . Potential benthic habitats of early Mars lakes, probably oligotrophic, could range from hydrothermal to cold sediments. Dynamic processes in the water column (such as turbidity or UV penetration) as well as in the benthic bed (temperature gradients, turbation, or sedimentation rate) contribute to supply nutrients to a potential microbial ecosystem ...

⇒

key: n: sediment
freq: 10
key: nn: proto-paratethys sea
freq: 9
key: a: glacial
freq: 7
key: n: mmes
freq: 7
key: a: tropical
freq: 7

dataHomogenise - Homogénéisation automatique de mots-clés

Traitement

1. [write , written , huge]
[immense , wrtie , example]

⇒

1. [write , write, huge]
[huge , write , example]

2. [... , ... , immense]
[huge, ... , ...]

⇒

2. [... , ... , immense]
[immense , ... , ...]

astroTag - Extraction d'entités nommées en astronomie

Traitement

V643 Orionis is a binary star system located in the Orion constellation, offering valuable insightsinto stellar evolution.	⇒	**Etoiles binaires (et pulsars)**: V643 Orionis **Constellations**: Orion
If these planets had isothermal atmospheres, the light curves obtained during those occultations would have been smooth. Hence the presence of spikes in the light curves demonstrates immediately that the atmospheres of Jupiter and Neptune are not isothermal over distances much smaller than a scale height	⇒	**Planete**: Jupiter, Neptune
This did not occur accidentally since g Carinae is one of the most luminous stars of the Galaxy. The environment of this extended object can be observed in very high angular (spatial) and spectral resolution simultaneously using the Hubble Space Telescope (HST) with its Space Telescope Imaging Spectrograph (STIS) on board (Kimble et al., 1988).	⇒	**Objets artificiels**: Hubble Space Telescope, HST **Etoiles binaires (et pulsars)**: g **Nebuleuse et region apparentes**: Carinae
The purportedly fastest star in the Gaia catalogue, Gaia DR2 5932173855446728064 (Bromley et al. 2018; Marchetti et al. 2019), has been found to be spurious (Boubert et al. 2019).	⇒	**Objets artificiels**: Gaia **Etoiles**: Gaia DR2 5932173855446728064

Et aussi, pour la chimie, des maladies, des toponymes, espèces, etc.

Et aussi

- Détection du bruit d’un corpus
- Extraction des références phares d’un corpus
- Classification d’un corpus de textes
- …

ISTEX

Infrastructure de services pour la fouille de textes

Inist-CNRS | 2025

CONDITION d’UTILISATION : Qui peut s’en servir ?

Aussi ouvert que possible

- 30 millions de métadonnées en libre accès
- Documents sous licence accessibles de manière transparente aux **AYANT-DROITS**

- Des services IA en open source
- Des services IA utilisables à travers différents outils pour tous les **ADHÉRENTS**

USAGE :
Comment s’en servir…

	Everybody	Analysts	Developers
Ressources	search. istex.fr Loterre. istex.fr	Corpus. istex.fr	API. istex.fr
Services	tdm-factory. services.istex.fr	Lodex. istex.fr	API. services.istex.fr

FOCUS

tdm-factory.
services.istex.fr

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Review article

Unmasking the challenges in ideological and political education in China: A thematic review

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ABSTRACT

China's distinctive educational approach, particularly its emphasis on ideological and political education, has garnered considerable academic attention for its impact on shaping individual values, fostering citizenship, and maintaining social stability. Despite the Chinese government's prioritization of ideological and political education, academic research in this field appears constrained, with existing studies predominantly focusing on normative and descriptive aspects. Normative research delineates how ideological and political education should be executed, while descriptive research illustrates its practical implementation. The effectiveness of these approaches is significantly diminished if they are not adequately interconnected—when only the current reality is explained without providing tools for improvement or when prescribed steps for improvement lack a basis in specific contexts. This paper conducts a comprehensive review of research on ideological and political education using ATLAS. ti 9 for thematic analysis. The review aims to unveil the intricate landscape of current research in China and address key questions: What are the primary trends in the literature on ideological and political education between 2021 and July 2023? What challenges does ideological and political education face? Through a direct exploration of these issues, this paper seeks to optimize the ideological and political education system, elevate its adaptability and effectiveness, and open avenues for research, fostering a more dynamic, inclusive, and resilient development of ideological and political education.

1. Introduction

Chinese education occupies a unique position within the global education landscape [1]. The structure of the Chinese education system incorporates ideological and political education throughout the entire educational process, influencing the values, beliefs, and civic consciousness of individuals [2]. This education component plays a crucial role in facilitating the comprehensive development of students and contributing to social progress in harmony. Given the context of rapid globalization, technological advancements, and

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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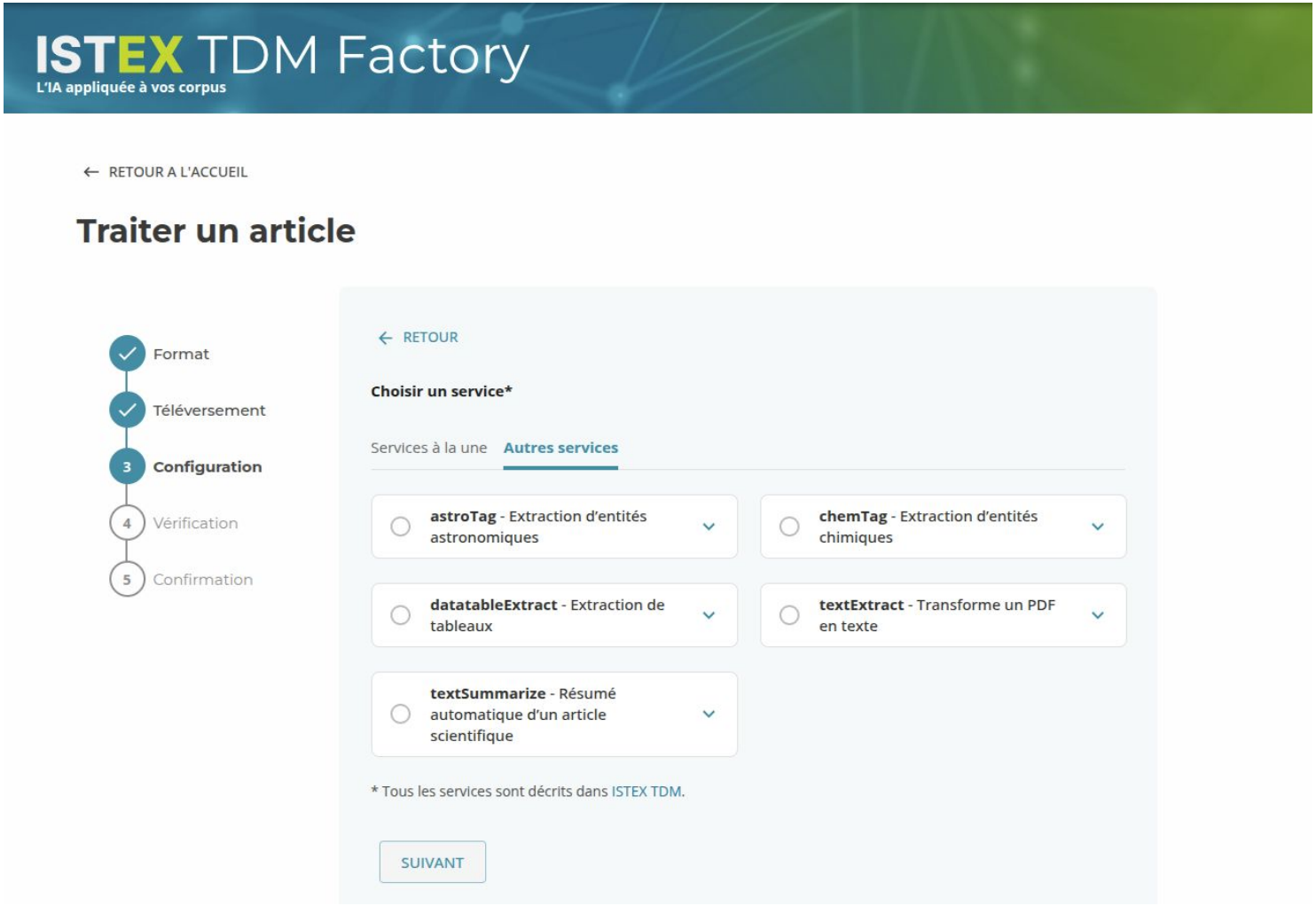
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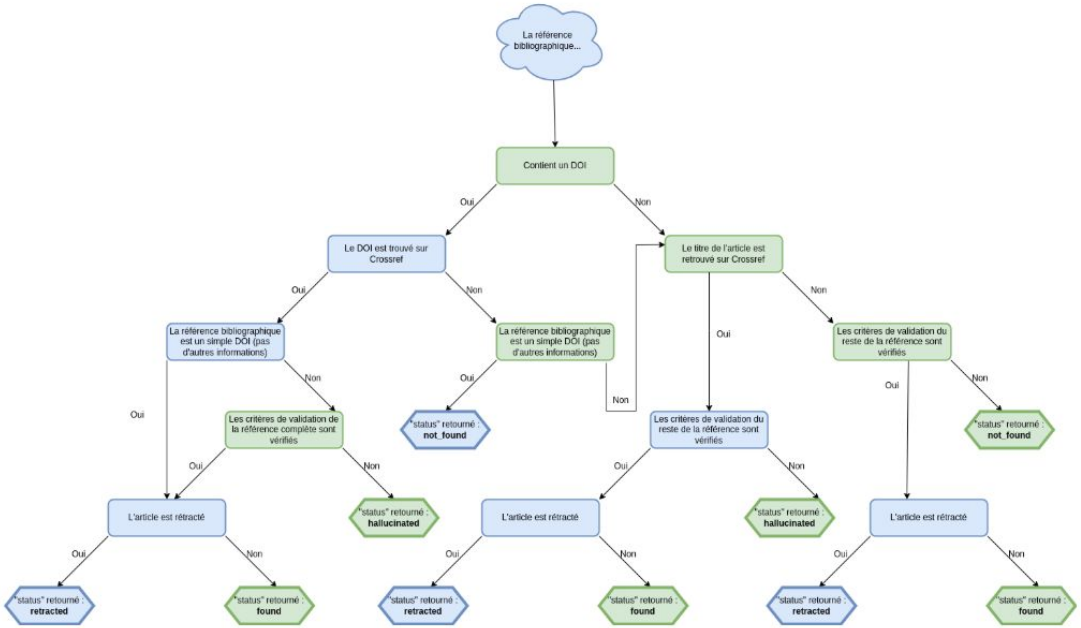

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- Une architecture **extensible**

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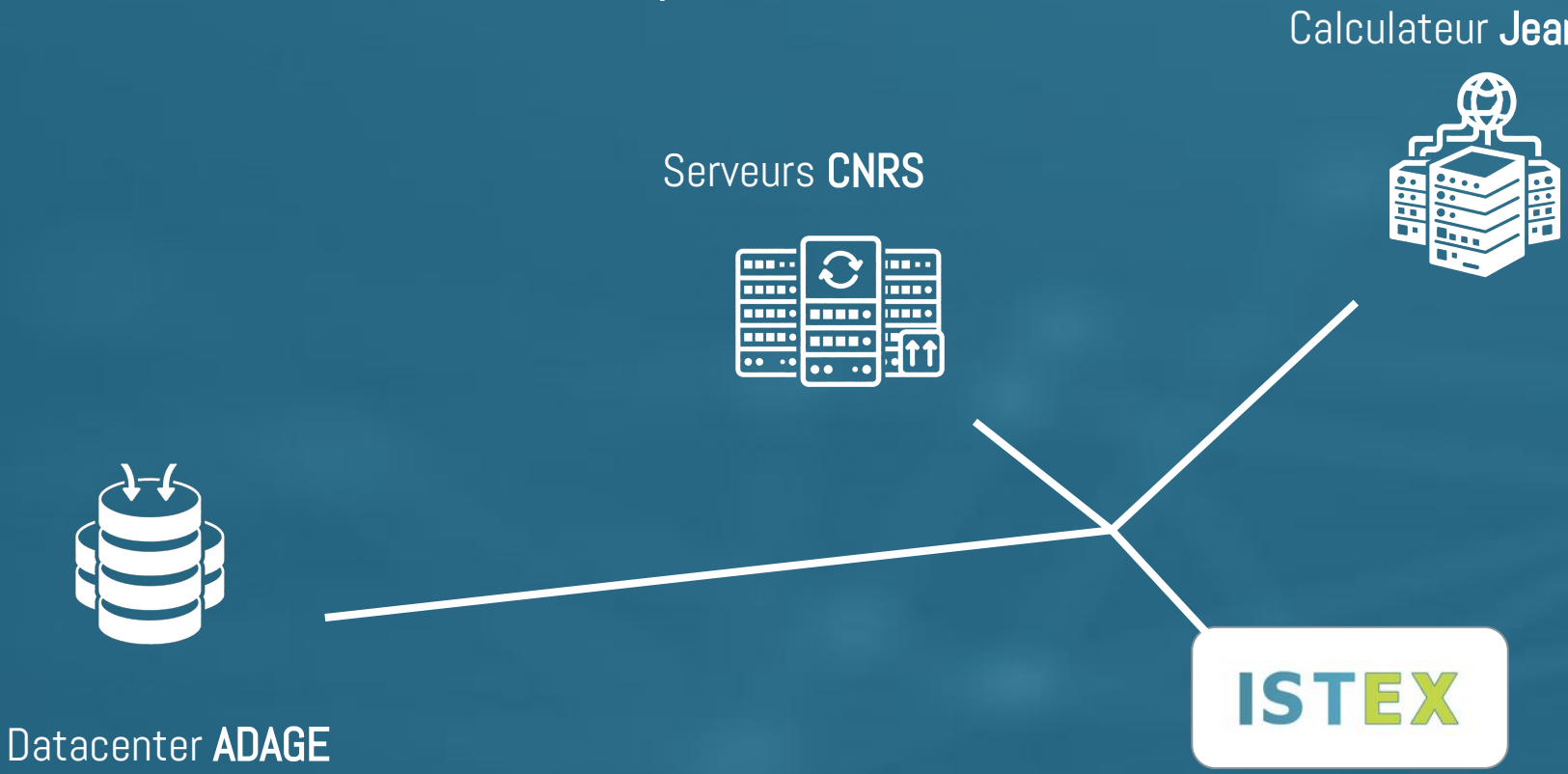

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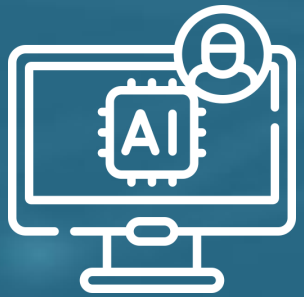

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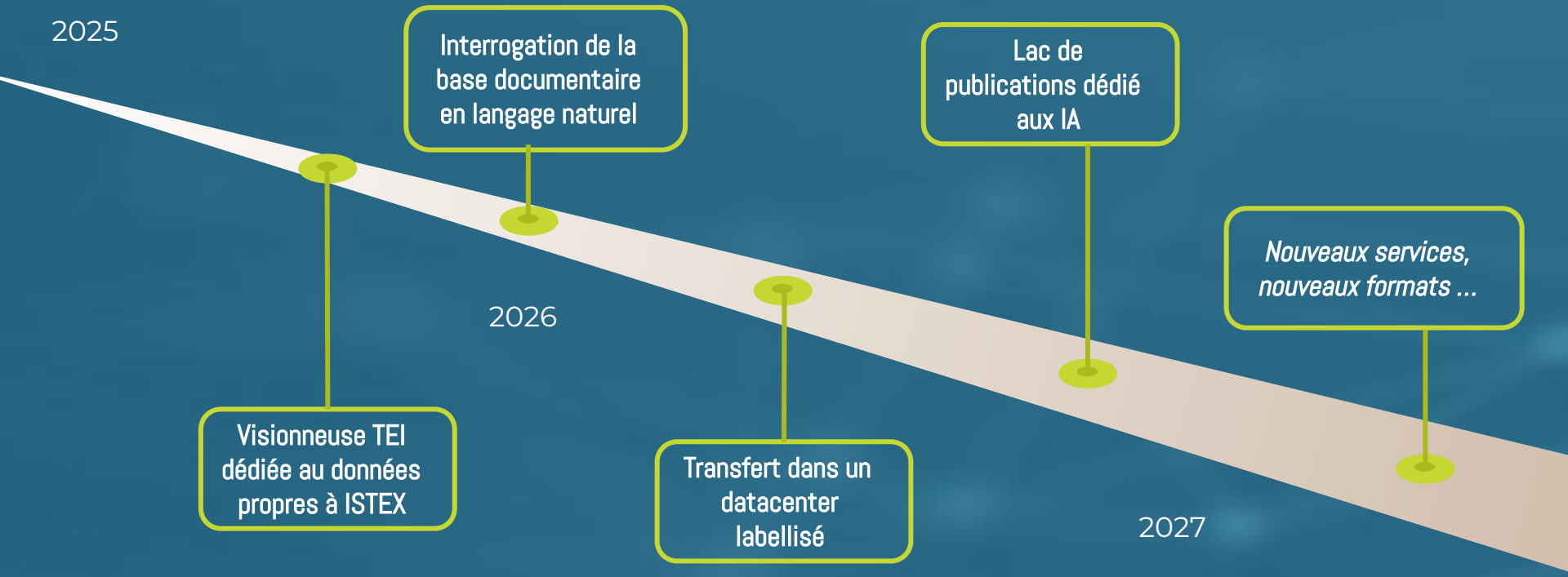
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