



Journée francophone OpenAlex

Lab Explorer : identifier les experts EPFL grâce aux données ouvertes et à l'IA

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Data Scientist

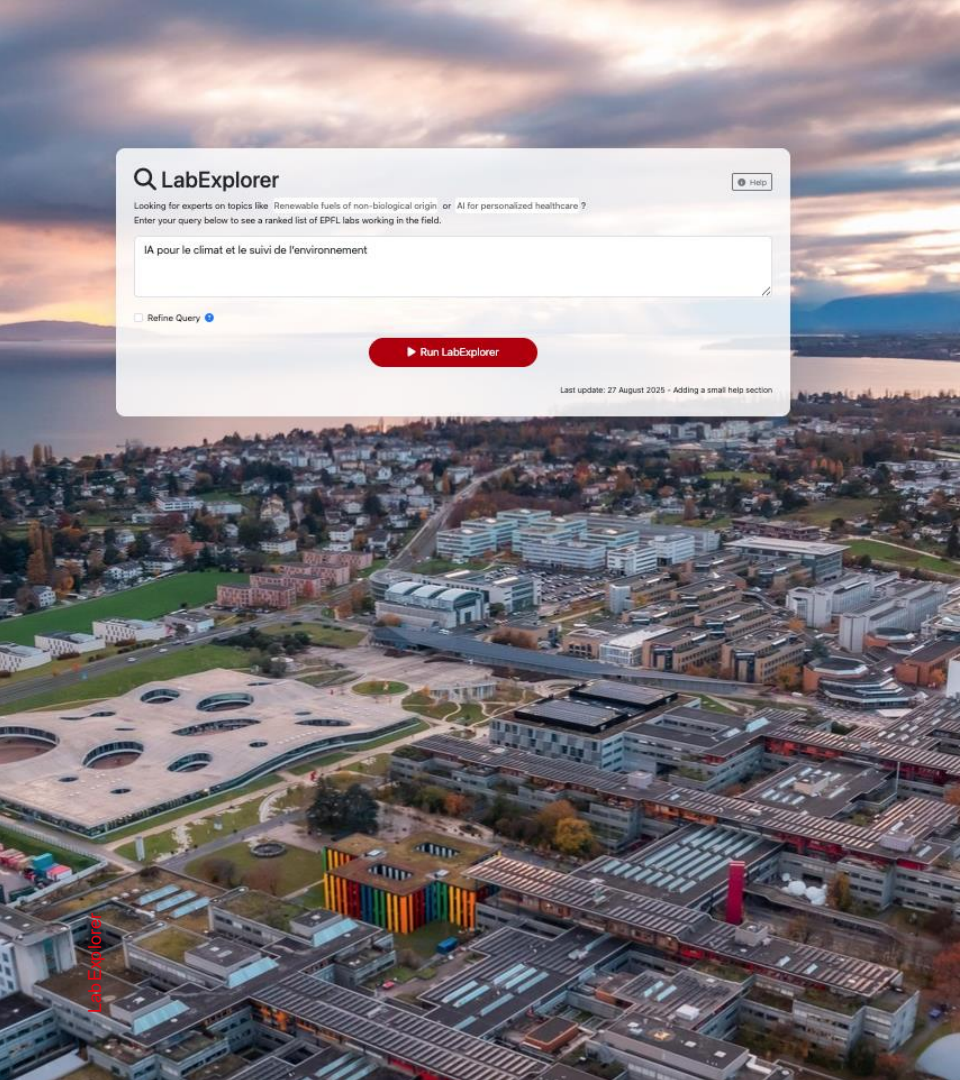
Données institutionnelles

- Pourquoi trouver des experts
- Comment LabExplorer fonctionne
- Application : Recommandation des appels à projet UE
- Le rôle et le potentiel des données académiques ouvertes

Trouver des experts

Pourquoi trouver des experts ?

- Communication
- Politique
- Financements
- Stratégie
- Collaborations
- Recrutement
- Enseignement
- Événements
- ...



Q LabExplorer HELP

Looking for experts on topics like Renewable fuels of non-biological origin, or AI for personalized healthcare? Enter your query below to see a ranked list of EPFL labs working in the field.

IA pour le climat et le suivi de l'environnement

Refine Query

[▶ Run LabExplorer](#)

Last update: 27 August 2025 - Adding a small help section

LabExplorer

Example:

IA pour le climat et le suivi de l'environnement

Q1. Comment classer les papiers liés au sujet ?

Scene and Environment Monitoring Using Aerial Imagery and Deep Learning

1st Mahdi Maktubdar Oghaz 2nd Manzoor Razaak 3rd Hamideh Kerdegari
dept. of Science, Eng and Computing dept. of Science, Eng and Computing dept. of Science, Eng and Computing

A Multi-Modal IoT Node for Energy-Efficient Environmental Monitoring with Edge AI Processing

Philip Wiese^{*}, Victor Kartsch^{*}, Marco Guermandi^{*}, Luca Benini^{*1}
^{*}Integrated Systems Laboratory (ISL), ETH Zurich, Switzerland

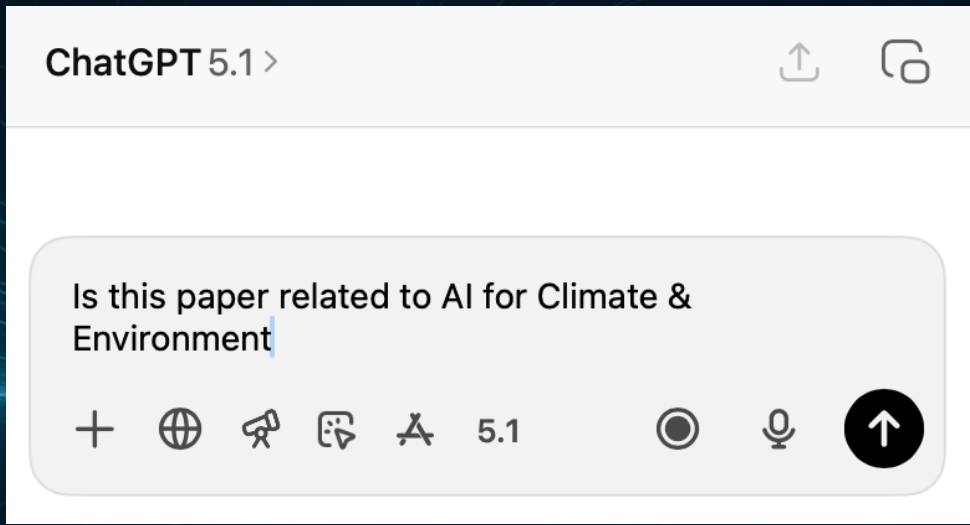
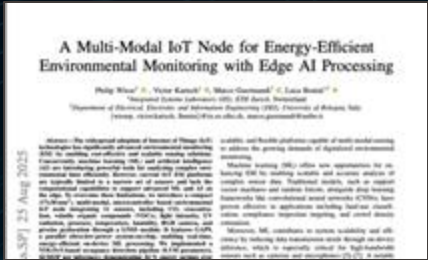
Tackling Climate Change with Machine Learning

David Rolnick¹, Priya L. Donti², Lynn H. Kaack³, Kelly Kochanski¹, Alexandre Lacoste⁵,
Kris Sankaran^{6,7}, Andrew Slavin Ross⁸, Nikola Milojevic-Dupont^{10,11}, Natasha Jaques¹²,
Anna Waldman-Brown¹², Alexandra Luccioni^{6,7}, Tegan Maharaj^{6,7}, Evan D. Sherwin¹²,
S. Karthik Mukkavilli^{6,7}, Konrad P. Körding¹, Carla Genners¹³, Andrew Y. Ng¹⁴,
Demis Hassabis¹⁵, John C. Platt¹⁰, Felix Creutzig^{10,11}, Jennifer Chayes¹⁷, Yoshua Bengio^{6,7}

¹University of Pennsylvania, ²Carnegie Mellon University, ³ETH Zurich, ⁴University of Colorado Boulder, ⁵Element AI, ⁶Mila, ⁷Université de Montréal, ⁸École Polytechnique de Montréal, ⁹Harvard University, ¹⁰Mercator Research Institute on Global Commons and Climate Change, ¹¹Technische Universität Berlin, ¹²Stanford University, ¹³Massachusetts Institute of Technology, ¹⁴DeepMind, ¹⁵Google AI, ¹⁷Microsoft Research

Abstract

Climate change is one of the greatest challenges facing humanity, and we, as machine learning experts, may wonder how we can help. Here we describe how machine learning can be a powerful tool in reducing greenhouse gas emissions and helping society adapt to a changing climate. From smart grids to disaster management, we identify high impact problems where existing gaps can be filled by machine learning, in collaboration with other fields. Our recommendations encompass exciting research ques-



Q2. Comment traiter des milliers de publications



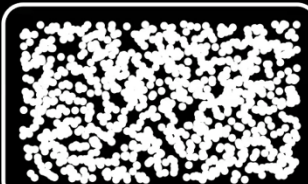
- Outil interne pour identifier les experts de l'EPFL
- Utilise ChatGPT pour le classement (Q1) et un processus Active Learning pour le dimensionnement (Q2)
- Entrée: sujet scientifique (texte libre)
- Sortie: classement des papiers et des laboratoires
- Données sources: Infoscience et OpenAlex

Animation visible ici: <https://youtu.be/gzcp6trqWI0>

IA pour le climat et le suivi de
l'environnement

ut

EPFL papers



Résultats LabExplorer : Publications

| sciper | title | prediction |
|--------|---|------------|
| 199130 | Intraday solar irradiance forecasting using public cameras | 0,88 |
| 150680 | Forest Drought Impact Prediction based on Spatio-temporal Satellite Imagery and Weather Fore | 0,88 |
| 168244 | Numerical Weather Prediction and Artificial Neural Network Coupling for Wind Energy Forecast | 0,88 |
| 199130 | Meteorological information prediction using images from webcams | 0,87 |
| 120906 | Geometric deep learning for medium-range weather prediction | 0,86 |
| 150680 | Forest drought impact prediction based on satellite imagery and weather forecasts - a spatially c | 0,86 |
| 199130 | Solar Multimodal Transformer: Intraday Solar Irradiance Predictor Using Public Cameras and Tir | 0,86 |
| 119864 | Revisiting Machine Learning Approaches for Short- and Longwave Radiation Inference in Weath | 0,86 |
| 150680 | Meta-learning to address diverse Earth observation problems across resolutions | 0,85 |
| 150680 | Meteor: Meta-learning connecting earth problems observed from space | 0,85 |
| 156731 | Tools for multi time horizon PV point forecasting and prediction intervals | 0,84 |
| 150680 | Deep Learning for the Earth Sciences: A Comprehensive Approach to Remote Sensing, Climate S | 0,84 |
| 150680 | Semi-Supervised Deep Learning Representations in Earth Observation Based Forest Managemen | 0,84 |
| 167659 | The value of weather forecasts for optimally placed wind and solar electricity generators | 0,83 |
| 150680 | A deep network approach to multitemporal cloud detection. | 0,82 |
| 168244 | Explainable modeling for wind power forecasting: A Glass-Box model with high accuracy | 0,82 |

◀
▶
publications
agg_labs
params
+

| sciper | #pub | #pos | %pos | Nom | Prénom | Nom unité |
|--------|------|------|------|----------------|---------------------|--|
| 150680 | 146 | 98 | 67% | Tuia | Devis | Laboratoire de science computationnelle pour l'environnement et l'observation de la Terre |
| 357164 | 47 | 16 | 34% | Bonetti | Sara | Laboratoire d'hydrologie et de géomorphologie |
| 174686 | 12 | 3 | 25% | Lambertini | Luisa | Chaire de la Prof. ordinaire Lambertini |
| 347557 | 19 | 4 | 21% | Sonta | Andrew James | Laboratoire d'ingénierie civile et de technologie pour la durabilité orientée sur l'humain |
| 357092 | 53 | 9 | 17% | Manoli | Gabriele | Laboratoire des systèmes urbains et environnementaux |
| 207237 | 115 | 18 | 16% | Jones | Colin Neil | Laboratoire d'automatique 3 |
| 349138 | 134 | 19 | 14% | Fink | Olga | Systèmes intelligents de maintenance et d'opérations |
| 156731 | 142 | 20 | 14% | Paolone | Mario | Laboratoire des systèmes électriques distribués |
| 100810 | 122 | 17 | 14% | Chenal | Jérôme | Communauté d'études pour l'aménagement du territoire |
| 176402 | 97 | 13 | 13% | Berne | Alexis | Laboratoire de télédétection environnementale |
| 111184 | 38 | 5 | 13% | Davison | Anthony Christopher | Chaire de statistique |
| 139973 | 58 | 6 | 10% | Karimi | Alireza | Groupe SCI STI AK |
| 275762 | 78 | 8 | 10% | Ferrari Trecat | Giancarlo | Groupe SCI STI GFT |
| 168244 | 70 | 7 | 10% | Porté Agel | Fernando | Laboratoire d'ingénierie éolienne et d'énergie renouvelable |
| 167659 | 151 | 15 | 10% | Lehning | Michael | Laboratoire des sciences cryosphériques |
| 140973 | 255 | 25 | 10% | Maréchal | François | Groupe SCI STI FM |
| 126005 | 42 | 4 | 10% | Skaloud | Jan | Laboratoire de mensuration et d'observation terrestre |
| 149002 | 74 | 6 | 8% | Joost | Stéphane | Laboratoire de géochimie biologique |
| 283341 | 78 | 6 | 8% | Khovalyg | Dolaana | Laboratoire d'ingénierie du confort intégré |
| 134136 | 52 | 3 | 6% | Aberer | Karl | Laboratoire de systèmes d'information répartis |
| 241436 | 35 | 2 | 6% | Vagnoni | Elena | Laboratoire des systèmes électriques distribués |



publications

agg_labs

params





Recommandation des appels à projets UE



Large-scale production of liquid advanced biofuels and renewable fuels of non-biological origin

HORIZON-CL5-2026-02-D3-01

Topic description

Expected Outcome:

A quite wide portfolio of technologies, which are close to be deployed but still lack the real-world demonstration of economic viability, exists. Significant volumes of advanced biofuels and renewable fuels of non-biological origin (RFNBOs) are needed to cover the current fleets and the sectors where renewable fuels are the main long-term solution, such as aviation and shipping and energy-intensive industries. Therefore, an exceptional effort is needed to establish more successful projects where full-scale plants are built and operated based on the vast potential of sustainable feedstocks throughout the EU.

Project results are expected to contribute to all of the following expected outcomes:

- Energy producers and consumers in transport and energy-intensive industries benefit from the mobilisation of building of industrial capacity for advanced biofuels and renewable fuels of non-biological origin;
- Technology developers benefit from the support to the preparation of first-of-a-kind plants of advanced biofuels and/or renewable fuels of non-biological origin to become precursors for the following commercial plants;
- Technology providers benefit from the de-risking of the innovative technologies, reduction of CAPEX and production costs, boosting of scale-up and contribution to market up-take of advanced biofuels and/or renewable fuels of non-biological origin;
- Public authorities, citizens, researchers, and industrial stakeholders benefit from the improvement of the sustainability, reliability, robustness, and security of the relevant value chain;
- National authorities profit from the provided evidence for innovative advanced biofuels and/or renewable fuels of non-biological origin technologies, which can contribute to the Renewable Energy Directive indicative target for innovative renewable energy technology in each Member State of at least 5 % of newly installed renewable energy capacity by 2030, as well as to the targets under ReFuelEU Aviation and FuelEU Maritime.
- Policy makers and regulators profit from the provided factual information and evidence in view of their decision as regards accelerating permitting procedures, harvesting benefits from multiple uses of land and water and increasing the responsiveness of research and innovation in that field to diverse societal interests and concerns;
- The implementation of the Strategic Energy Technology Plan (SET Plan) Action for Renewable Fuels and Bioenergy is supported and facilitated.

Scope:

Demonstrate innovative large-scale production of liquid advanced biofuels and/or renewable fuels of non-biological origin for sectors with specific need for such fuels (particularly aviation and shipping and energy-intensive industries). Production is expected to be based on various EU sustainable biomass feedstocks, notably biogenic residues and wastes, biogenic part of slurries and industrial wastes, and/or on non-biological origin feedstocks, such as renewable hydrogen and CO₂ or renewable carbon, nitrogen, or their compounds, through chemical, biochemical, biological, and thermochemical pathways, or a combination of them. Proposals are expected to:

- demonstrate large scale production of ready-to-deploy advanced biofuels and/or renewable fuels of non-biological origin, engaging feedstock developers and suppliers, technology developers, fuel suppliers, end users for purchasing the quantities, national bodies, and public or private authorities with funding capacity;
- address and assess the impact of actual, real-size feedstocks, (like for example agricultural wastes, energy crops grown on marginal and degraded lands or as intermediate crops, forestry wastes, biogenic municipal and industrial wastes, all types of renewable hydrogen, actual streams of CO₂ and nitrogen, available renewable carbon or their compounds), in terms of their constitution on plant design, (e.g. for feedstock pretreatment and wastewater treatment as appropriate);
- address and assess the impact on plant design and feasibility of improving the feedstocks externally and upstream to the fuel production plant, by increasing the energy density of the feedstocks through for example torrefaction, by homogenisation of feedstocks for making them uniform or similar, and by standardisation of feedstocks, as appropriate.

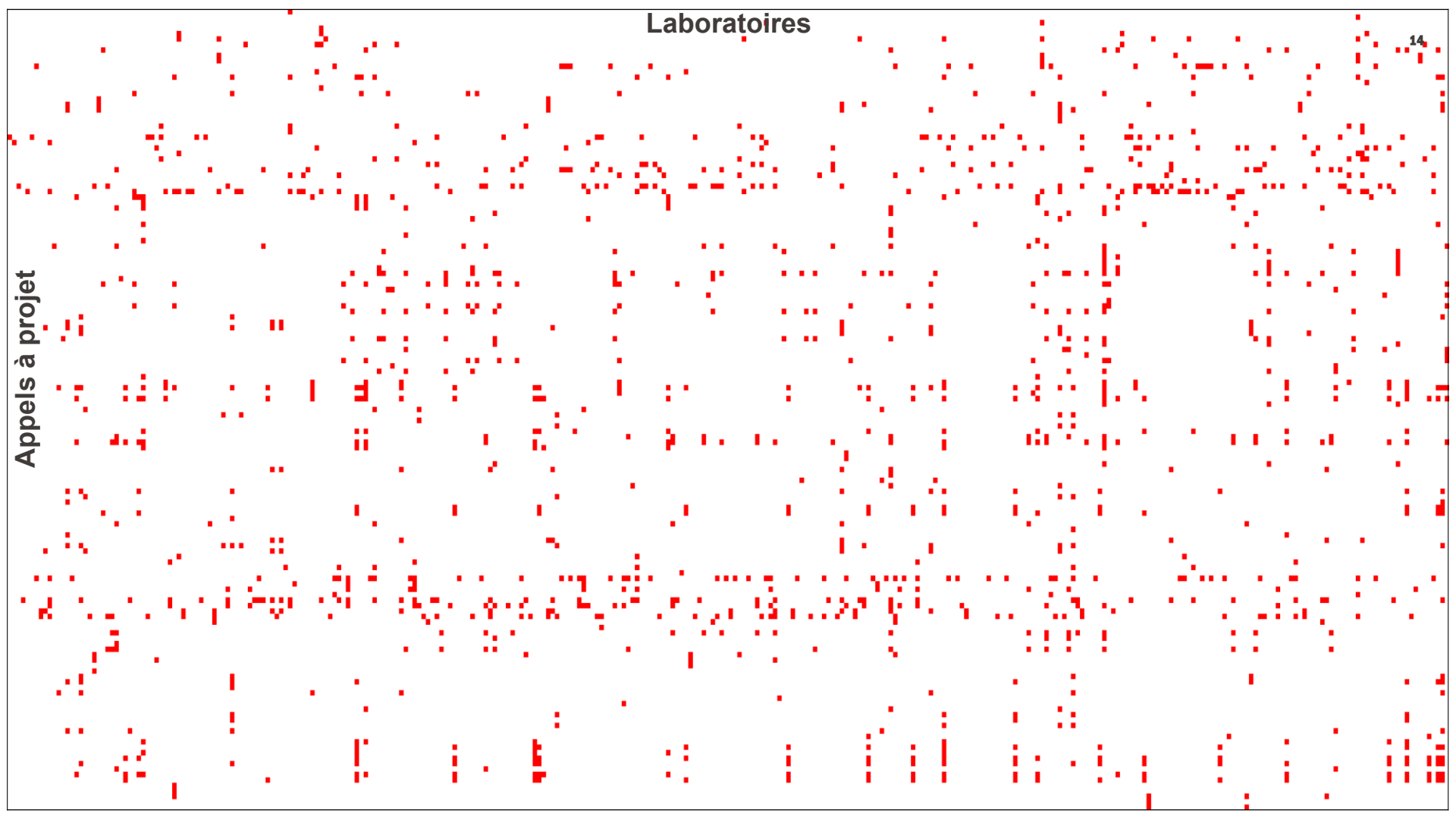
Projects should produce a lifetime cycle analysis of their production route and in particular for renewable fuels of non-biological origin, as inputs in terms of renewable energy and material (CO₂, nitrogen, renewable hydrogen) may not be continuously available.

Production of renewable hydrogen as an end-product is excluded from the scope of this topic.

The projects are expected to result in reference cases for ready-to-build, revamp/reuse and/or operate full-scale plants of advanced biofuels and/or renewable fuels of non-biological origin. Improvements, optimisation, new schemes and modification of existing demonstration plants that can result into the preparation of the next full-scale plant are considered within scope to encourage deployment of cost-effective solutions.

The plan for the exploitation and dissemination of results should include a strong investment and business case and sound exploitation strategy. The exploitation plan should include plans for scalability, commercialisation, and deployment. It is expected to provide information and assessment about the economic viability of the commercial plant, the permitting procedures, a full value chain-based business plan and identified funding sources such as private equity, loans, loans guarantee, grants, or public financing for CAPEX and OPEX, as well as take-off agreements for the fuel uptake. Moreover, they should provide information on, or linked to, the identified funding sources, like private equity, the InvestEU, the EU Catalyst Partnership, the Innovation Fund, and possibly the European Regional Development Fund programmes. Projects are expected to include at least one relevant local economic business case, outlining local value and supply chains and the expected number of local jobs at the place of deployment. Furthermore, proposals are expected to provide

Appels à projet



De : Research Office <research@epfl.ch>

Date : mercredi, 4 juin 2025 à 07:47

À : Rachid Guerraoui <rachid.guerraoui@epfl.ch>

Objet : Horizon Europe 2025 – Funding Opportunities Aligned with Your Research

Dear Prof. Guerraoui,

The Horizon Europe 2025 calls for collaborative projects have been published on May 14 by the European Commission. Based on an analysis of your recent publications, we have identified the following call topics that may be of particular interest to you:

- [HORIZON-CL4-2025-03-DATA-11](#): Open Internet Stack: development of technological commons/open-source 3C building blocks (RIA)
- [HORIZON-CL4-2025-04-DATA-02](#): Empowering AI/generative AI along the Cognitive Computing continuum (RIA) (AI/Data/Robotics Partnership)
- [HORIZON-CL4-2025-03-HUMAN-16](#): Drive the evolution of the internet towards open and interoperable Web 4.0 and Virtual Worlds
- [HORIZON-CL4-2025-04-DIGITAL-EMERGING-07](#): Enhanced Learning Strategies for General Purpose AI: Advancing GenAI4EU (RIA)
- [HORIZON-CL5-2026-02-D4-02](#): Smarter buildings as part of the energy system for increased efficiency and flexibility – Societal Readiness Pilot

Disclaimer: Please note that this is an exploratory approach: while we aim to provide call topics that are relevant, some may be missing, and others listed may not be fully aligned. We welcome any feedback you may wish to share.

[...]

Thank you and best wishes!

Best regards,

- *Many thanks for this very useful and relevant info.*
- *Thanks a lot for the message, indeed that may actually be interesting for me. I agree, some of these other calls look excellent.*
- *Thank you very much it is indeed a great amount of relevant calls ! I will consider some of them carefully.*
- *Thank you for your message! I had a look at the call topics the other day and identified a few that could fit (the SOIL-05, 06, 07, and 10 calls).*
- *I just wanted to let you know, I think this service is great. The matching of the Horizon calls to my research interests are more or less spot on.*
- *Thank you, this is very useful!*



Le rôle et le potentiel des données académiques ouvertes

- Source principale : Infoscience
 - Notre dépôt institutionnel interne
- Source secondaire : OpenAlex
 - Un complément essentiel, notamment pour les nouveaux professeurs
 - Requête par professeur (ORCID)

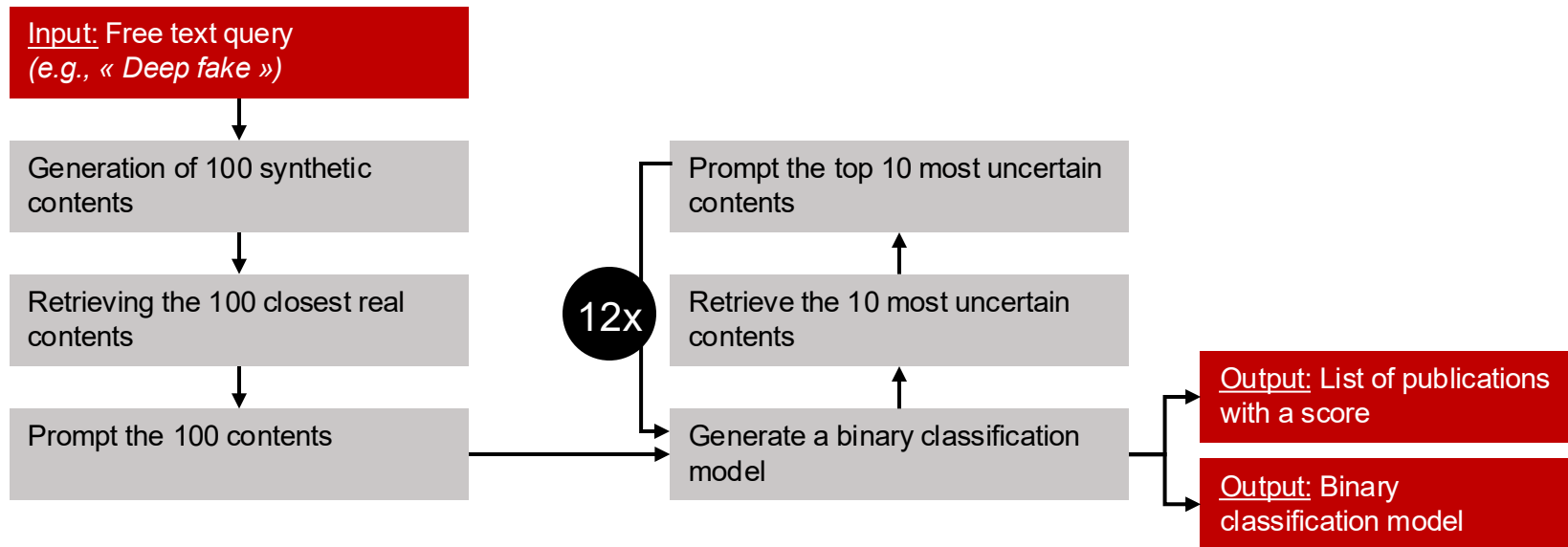
- LabExplorer « global »
- Identifier des partenaires pour les projets collaboratifs
- Analyse comparative et benchmarking
- Aide à la décision stratégique

...de façon ouverte et transparente



Merci

Gaël Bernard
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- Embeddings
 - OpenAI: **text-embedding-3-small** (taille: 1536)
- « Zero-shot learning » ('is this paper related to...')
 - **gpt-5-mini**
- Classification:
 - **Régression logistique** (avec équilibre des classes)
- Production synthétique de documents
 - **gpt-5-nano**
 - #documents: **100**
- Itérations
 - #itérations: **10**