


Success stories from AI4Media Open Call #1

Empowering research and
applications in Artificial
Intelligence for the Media industry





One of the strategic objectives of the AI4Media project is the creation of a network of partners and associates in academia and industry and a vibrant ecosystem for the quick market uptake of technologies.


In light of this objective, AI4Media has established a competitive funding programme to attract and involve researchers and the industry to the AI4Media Network, to boost cross-border and cross-sector innovation within media sectors. The funding programme has a total of €1 million to fund 20 innovative projects focusing on AI-driven research or applications for the media sector.

Open Call #1 overview

The objective of the AI4Media – Open Call #1 was to engage research and industry actors that develop and integrate applied research in the field of AI, to develop new research and applications for AI, and contribute to the enrichment of the pool of research and technological tools to be made available on the AI-on-Demand (AIoD) platform.

The AI4Media Open Call #1 targeted two types of projects, divided into two tracks:

- **Research track:** targeted academia and researchers working in the AI field to increase the value of the AI4Media ecosystem by developing and integrating new research in AI media domains. Research track projects ran for 12 months and each received up to €50.000.
 - **Application track:** targeted entrepreneurs, and companies (micro-SMEs, SMEs, mid-caps) to submit innovative AI applications for the media sector by building on the research coming out of AI4Media or by adopting AI solutions from other sectors to the media sector. Application track projects ran for 9 months and each received up to €50.000.
- 



The AI4Media – Open Call #1 was launched on 1 September 2021 and was open to submissions until 1 December 2021. A total of 60 proposals were submitted to the open call, 40 addressing the Application track and 20 addressing the Research track. Moreover, 40 of the proposals were submitted by industry entities (e.g. start-ups, SMEs), while the remaining 20 were submitted by individuals, research organisations, and secondary and higher education institutions. Submissions were received from 22 different countries, mainly from Germany, Greece, Italy, Portugal, Spain, and the United Kingdom.

Open Call #1 programme

The AI4Media – Open Call #1 funding programme was launched on 1 March 2022 with five research and five application projects.

In addition to the €50.000 to fund their activities, each project received mentorship support provided by AI4Media partners. The 10 funded projects also participated in a Bootcamp to provide them with training on specific topics of their interest, including marketing and communication, funding opportunities, team leadership, and user experience applied to AI and media.

The five application and five research tracks successfully ended their projects in October 2022 and February 2023, respectively, having provided relevant advances to the AI and media domains, and valuable contributions to the AI-driven ecosystem.



AIEDJ

Full title of the project

AI empathic DJ

Project tagline/ slogan

Building an AI DJ app that reacts to a user's listening habits and allows semantic music search with individual and dynamic results.

Project Track

Application

Funding period

1 March 2022 - 31 October 2022

Beneficiary lead name

Musicube

Type of organisation

GmbH

City & Country

Hamburg, Germany

Website

<https://musicu.be>

Main contact

David Hoga

Position in the organisation

CEO musicube GmbH

Other people involved in the project

Agnes Chung

Brief description of the project

Music streaming services give access to more than 80 million songs, but the biggest part remains undiscovered because search functions are limited, playlists are predefined and recommendation engines work on a "other users have also heard" basis.

Musicube's semantic search allows to search music by more than 300 different descriptive tags. This allows users to escape the musical filter bubble.

In the AI4Media project we developed this to not only search these descriptive tags neutrally, but also empathically by adapting to user's musical taste, because a "happy" song for a Metal fan is something different than a "happy" song for a Jazz lover.

What was the challenge?

While our engine operates in an embedding space where it finds suitable songs based on descriptions, it now had to consider the user's taste, which represents certain areas in the embedding space. We had to develop an algorithm that brought together these two geographies.

What results did you deliver (the solution)?

A web app where a user could connect their Spotify Account and then search with descriptive tags. The app would then auto-generate a playlist based on the tags and the musical taste of the user. This set could be fine-tuned with additional inputs, just like you would tell a DJ to change the nature of songs in the DJ set.

What is the impact of your project for the AI and media ecosystem?

We believe this was the first attempt to localize musical taste in an embedding space, that means defining a user's perspective on music as a part of an AI's view on music. We think this can have plenty of future applications based on such models.

What was the main benefit of participating in the AI4Media funding programme?

The programme contributed mainly funding that allowed us to build this piece of software.

What you did and achieved that would have been difficult/impossible without this funding?

The whole programme would have been difficult because we would otherwise have had too much pressure to generate immediate revenue with our development. This allowed us to invest several weeks of research and development time in something we cannot immediately monetize.

What's next for the project?

The streaming market leader Spotify has announced a feature with similar functionality (calling it AI DJ) shortly after the programme ended.

Organisation logo / project logo



This shows we were on the right track, but a B2C app is off the table for us. We will focus the playlist generation for B2B purposes and allow clients to build individual playlists based on a set of songs that represent the companies brand identity.

Relevant lessons learnt

Trust your intuition, but stay flexible and allow yourself to pivot if needed.

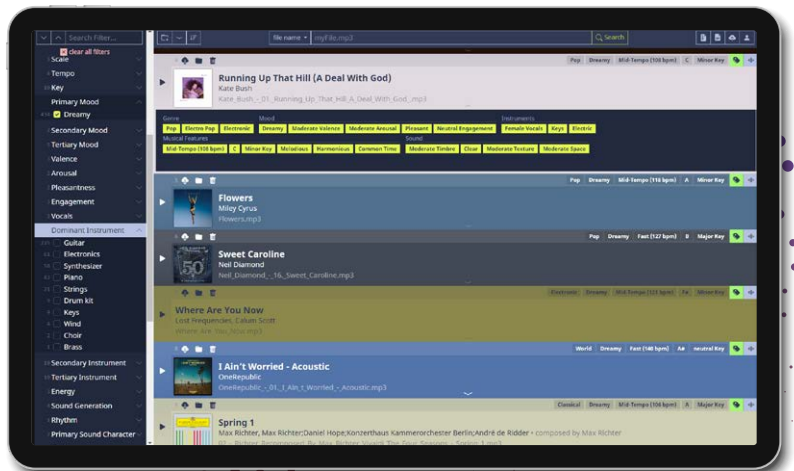
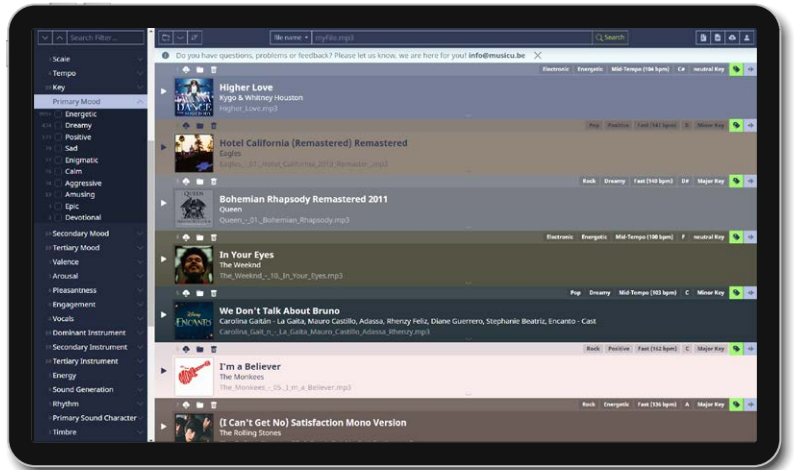
Total FSTP funding

€ 49,562.50

Brief testimonial about participation in the programme, including interaction with AI4Media and coaches, if you'd recommend such programmes to others.

The programme allowed us to explore a feature and potential business that we otherwise could not have risked to explore. It was of great help and I would recommend it to any start-up in the Media AI space.

People involved in the project



CIMA

Full title of the project

Next-Gen Collaborative Intelligence for Media Authentication

Project tagline/ slogan

Make collaborative collection of evidence for media authentication easier and faster

Project Track

Application

Funding period

1 March 2022 - 31 October 2022

Beneficiary lead name

AdVerif.ai

Type of organisation

Private Company

City & Country

Israel

Website

<https://adverifai.com/technology/>

Main contact

Or Levi

Position in the organisation

Founder

Other people involved in the project

Adi Levi, Inbal Croitoru

Brief description of the project

Propelled by the latest advancements in open-source intelligence (OSINT), our team of data scientists and veteran fact-checking experts developed a next-generation intelligence platform to make collaborative collection of evidence for media authentication easier and faster. The platform adopts cutting-edge AI methods from cyber-security to the media domain, empowering fact-checkers, investigators and journalists to be more effective. The goal is to power more effective, transparent, explainable and reproducible verification processes, across all media formats - videos, audios, images and text - at scale.

What was the challenge?

Today there are a variety of tools available to cyber-security researchers and forensic investigators. However, these tools currently pose 3 key challenges:

1. Fragmented - various capabilities are needed to conduct a media authentication investigation, but these are currently spread across many different tools.
2. Individualized - the tools are built for an individual investigator, but do not allow for collaborative investigation and collection of evidence.
3. Unstructured - while collection of evidence should be standardised and reproducible, due to the fragmented nature of the investigation tools - the working process and results tend to be unstructured and inefficient.

What results did you deliver (the solution)?

The platform provides a centralised User Interface with integrations to the most prominent and effective OSINT Tools, into one platform. The technology builds upon the Twitter messaging UI, empowering users to exchange information and promoting collaborative investigations. Moreover, the system integrates with an innovative e-signature time-stamped solution for evidence storage that goes beyond the existing tools. We delivered a fully working version of the system that was tested successfully by early users.

What is the impact of your project for the AI and media ecosystem?

The CIMA project contributes to strengthening the competitiveness and growth of the media industry by adopting cutting-edge solutions from the cyber intelligence space and applying them in media organisations. The project contributes know-how materials to improve the fact-checking process including best practices.

What was the main benefit of participating in the AI4Media funding programme?

Based on our work with fact-checkers and feedback to date, we estimate that the system will help to save 20%-40% of the time needed for media authentication. It provides a solution for multiple media formats including text and images, but also for videos and audios - where existing solutions are lacking.

Organisation logo / project logo

AdVerif.ai

What you did and achieved that would have been difficult/impossible without this funding?

Without this funding it would have been difficult to allocate the resources needed to develop this system and deliver a fully working version to users. Moreover, the participation in the programme helped us with recognition and supported the promotion of this solution across the media and fact-checking industry.

What's next for the project?

For future work, following the feedback from early users and the project coach, we are considering potential improvements to the UI and adding further support for collaborative work. At the same time, we are continuing with the marketing and promotion activities.

Relevant lessons learnt

The collaborative UI based on Twitter messaging fosters collaboration between fact-checkers. Moreover, the private version of the product allows collaboration on projects while maintaining confidentiality.

Brief testimonial about participation in the programme, including interaction with AI4Media and coaches, if you'd recommend such programmes to others.

It has been an amazing experience to take part in the AI4Media programme. The programme team has been truly supportive and helped us achieve great results in a short period. A special mention to the project coaches that provided great feedback.

As part of this work, we were honoured to be selected to present the CIMA project during the fourth annual Truth and Trust Conference. We learned a lot from this experience and we would strongly recommend to innovators and media professionals to take part in this programme.



CUHE

Full title of the project

An explainable recommender system for holistic exploration and CUration of media HEritage collections

Project tagline/ slogan

Explainable Recommendations for Media and Cultural Heritage Collections

Project Track

Application

Funding period

1 March 2022 - 31 October 2022

Beneficiary lead name

IN2 Digital Innovations GmbH

Type of organisation

SME

City & Country

Lindau (Bodensee), Germany

Website

<https://in-two.com>

Main contact

George Ioannidis

Position in the organisation

Director

Other people involved in the project

Alexandru Stan, Konstantina Geramani

Twitter profile

https://twitter.com/_in2t

Organisation logo / project logo



Brief description of the project

The CUHE project developed and demonstrated a web-based application based on AI recommendations that allows cultural heritage professionals (e.g. museum curators, archivists) as well as (humanities) researchers to explore existing media and cultural heritage digital collections in a more holistic way. It also allows them to curate new galleries or create digital stories and exhibitions which can showcase and share the new insights gained. CUHE was built using cultural heritage content from a key infrastructure for researchers and heritage professionals: Europeana (<https://www.europeana.eu>).

What was the challenge?

Media heritage collections have become much larger and diverse, and thanks to the recent advancements in AI and automatic metadata extraction techniques, the records have also become quite rich in metadata. However, one issue that remains is the quality of the record's metadata, either because of the limited precision and accuracy of the automatic annotation techniques used or the fact that the original data was mislabeled or lacked completeness. This creates problems when attempting to search for specific records or explore the collections.

What results did you deliver (the solution)?

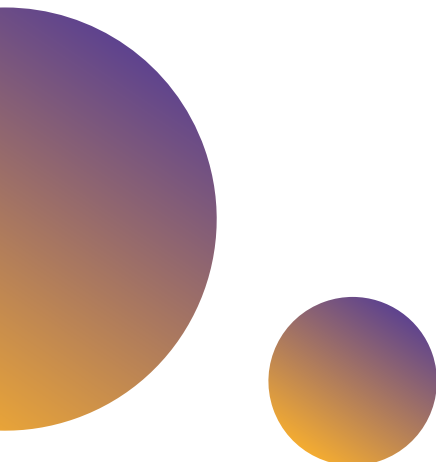
The CUHE system includes recommendations based on any combination of features related to similar names (person names), locations (place names) and items used. The application provides recommendations in the following cases: 1 item to editorial - based on the actual item on display recommend me related editorials and 2 editorial to editorial - based on the aggregated items of an editorial, recommend me related editorials. With this approach we support usage scenarios around both browsing and exploration of collections.

What is the impact of your project for the AI and media ecosystem?

CUHE provided media and cultural heritage organisations ways to create a more holistic view of their collections and to address known issues of mis-representations and under-representation, surfacing non-obvious connections between records and between collections and allowing users to explore related content while understanding what the underlying assumptions are. Furthermore, the project developed and contributed 1) open dataset covering 2) recommendation use cases for the recommendation task of ImageCLEF 2023 (<https://www.imageclef.org/>), an international conference on the benchmarking of systems and methods in text and image retrieval.

What was the main benefit of participating in the AI4Media funding programme?

CUHE addressed the issue of creating more transparent and explainable AI tools. The project is well aligned and complements the existing AI4Media ecosystem. Besides the funding that was important to realise the project, the CUHE team could access state of the art



What's next for the project?

We plan to use CUHE and the recommendation dataset in future editions of ImageCLEF. Furthermore, CUHE has been integrated as a recommendation system at the WEAVE Experience platform (<https://experience.weave-culture.eu>), which provides a way to import content from Europeana using a browser extension and remix, re-use it in different contexts. Furthermore, we are now exploring further use of the CUHE results in the 5Dculture project (<https://5dculture.eu/>), which deals with deploying and demonstrating a 3D cultural heritage space in 3 application scenarios: fashion, architecture and cityscapes.

Relevant lessons learnt

The quality of the recommendations depends a lot on the actual context and the user's intentions and background. For example, while visitors who are just browsing cultural heritage content and blog entries are looking for recommendations to connect the existing pieces and explore further, curators would need more specific recommendations that are calculated using larger feature sets (e.g. current epoch, at a specific time). Furthermore, there is a need to let the user be in control of the recommendations and allow them to adjust e.g. features or similarity thresholds.

Total FSTP funding

€50,000

Brief testimonial about participation in the programme, including interaction with AI4Media and coaches, if you'd recommend such programmes to others.

Overall, participating in AI4Media was a very valuable experience. Interacting with the CUHE coach and the project partners was an absolute pleasure. The partners were always willing to help and bring in their expertise in the topics we were dealing with in the specific stage of the project. Our coach provided valuable insights and feedback throughout the CUHE project and guided us in successfully realising this project. We were able to access top-notch researchers and knowledge in the programme and develop the CUHE recommendation system which opened up many opportunities. I would definitely recommend the AI4Media programme, it's a fantastic way to learn from experts, test out an idea/concept and develop a competitive advantage.

People involved in the project



edgeAI4UAV

Full title of the project

Computer Vision and AI Algorithms Edge Computation on UAV

Project tagline/ slogan

Edge Computing for UAVs towards Autonomous Missions Accomplishment

Project Track

Research

Funding period

1 March 2022 - 28 February 2023

Beneficiary lead name

International Hellenic University (IHU)

Type of organisation

University

City & Country

Kavala, Greece

Website

<https://www.ihu.gr/en/>

Main contact

Vassilios Chatzis

Position in the organisation

Professor at the Management Science and Technology Department

Other people involved in the project

George Papakostas

Theofanis Kalampokas

Ioannis Tzitzios

Fotios Panagiotopoulos

Kosmas Kosmidis

Vassilios Mardiris

Leonidas Fragidis

Charilaos Mizas

Organisation logo / project logo



Brief description of the project

edgeAI4UAV delivers a complete framework for moving people and objects detection and tracking in order to extract evidence data (e.g. photos and videos from specific events) at real-time (when the event occurs), like cinematography tasks, through a reactive UAV. Thus, an edge computation node for UAVs has been implemented. Lightweight computer vision and AI (deep learning) algorithms capable of detecting and tracking moving objects have been embedded in the UAV, while a decision-making module (edge computation) forces UAV to accomplish dedicated navigation missions at real-time, like following a specific moving object (e.g. specific actor, animal, etc.).

What was the challenge?

edgeAI4UAV targeted the "Combining deep learning-based computer vision and classic path-planning/ control for autonomous UAV cinematography tasks" (open call research challenge). It combines lightweight AI (deep learning) algorithms related to computer vision (i.e. people detection and tracking, pose understanding, etc.) with UAV active and content-based navigation planning, all embedded in an edge node on an UAV. The edge node is equipped with a mission planner, which combines the information from the AI algorithms and plans specific subordinate missions exploiting enhanced context dependent (such as human aware navigation) navigation path planning and control.

What results did you deliver (the solution)?

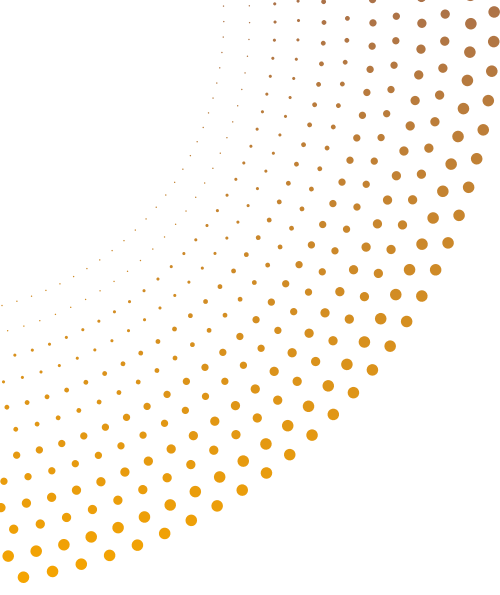
edgeAI4UAV has developed three lightweight AI algorithms related to computer vision (namely human detection & tracking, object re-identification, and pose estimation), which has been embedded in the UAV edge node. Furthermore, a content-based navigation planning module has been embedded in the edge node, which analyzes the information from the AI algorithms and plans subordinate missions leading the UAV to accomplish its missions, like following an actor in a scene during a movie.

What is the impact of your project for the AI and media ecosystem?

edgeAI4UAV as a research project contributes to the development of an edge node for UAVs, equipping them with the capability to autonomously track moving humans in an area. The lightweight algorithms and the mission planning system embedded in the UAV can assist users (like photographers, actors, etc.) to take high quality videos and photographs from an event, such as movie (track a specific actor), wedding (track the couple), etc. Furthermore, edgeAI4UAV has developed lightweight AI algorithms (both computer vision and mission planning) capable for edge computing and UAVs.

What was the main benefit of participating in the AI4Media funding programme?

The AI4Media project provided IHU the opportunity to develop an innovative project (edgeAI4UAV) with many research challenges at both computer vision and navigation areas.



AI4Media coaches have closely supervised the project implementation during its lifetime, providing valuable implementation and management advice. Periodic reporting and reviewing processes have also assisted with the timely delivery of the project results. Furthermore, AI4Media has provided visibility through its webpage and social media, as well as invitation to various dissemination events (like bootcamps, special issues in scientific journals, etc.). Finally, IHU has become an associated partner of the AI4Media project.

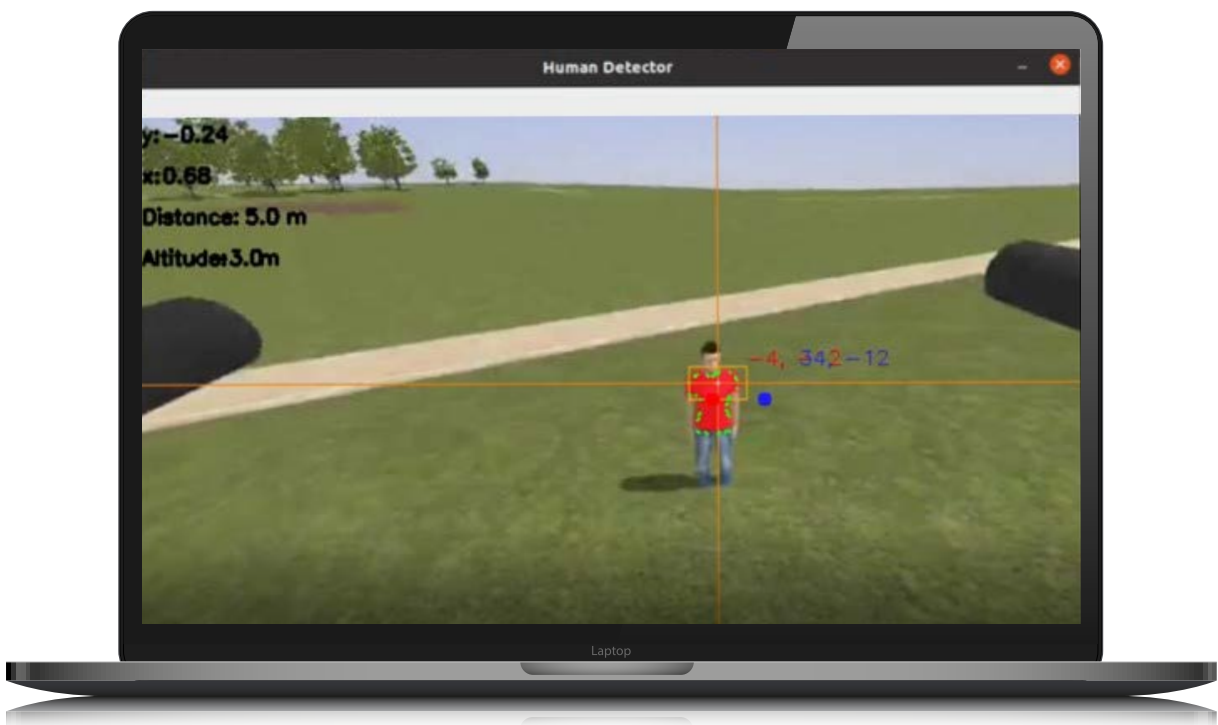
What you did and achieved that would have been difficult/impossible without this funding?

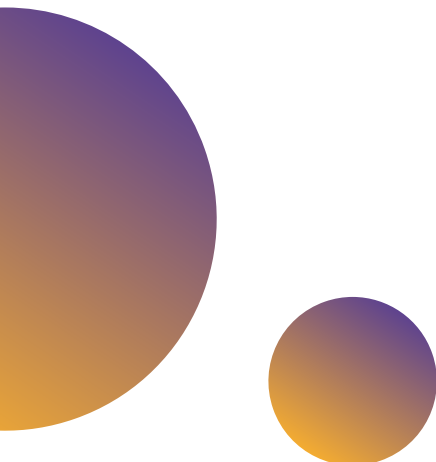
Although universities have a large pool of students and postgraduate people, it is difficult to make research without funding; otherwise, the progress of the research is very slow. Funding is the motivation to perform research and keep postgraduate students as well as PhD students in track.

Thus, in case of funding absence, probably the edgeAI4UAV project would have been delayed too much (and probably someone else would have implemented it).

What's next for the project?

IHU aims to go beyond the edgeAI4UAV project results, applying them to other domains, like lifeguarding, fire and environmental pollution detection and tracking, etc. IHU has already submitted proposals to EU and national funding agencies, leading edgeAI4UAV results not one, but multiple steps beyond its initial implementation (POC). Finally, the ultimate goal is to reach a high TRL, which will allow the people involved to create a spin-off company towards exploiting the results of the project.





Relevant lessons learnt

With the continuous advancements in hardware capabilities, an increasing number of applications are feasible and real, which probably in the previous years would be impossible. This hardware advancement gives edgeAI4UAV the possibility to create an edge node for UAV, providing autonomous capabilities to them. Furthermore, hardware or software (AI) should never be isolated and used one without the other. They should be thought as an integrated system, since one affects the other directly.

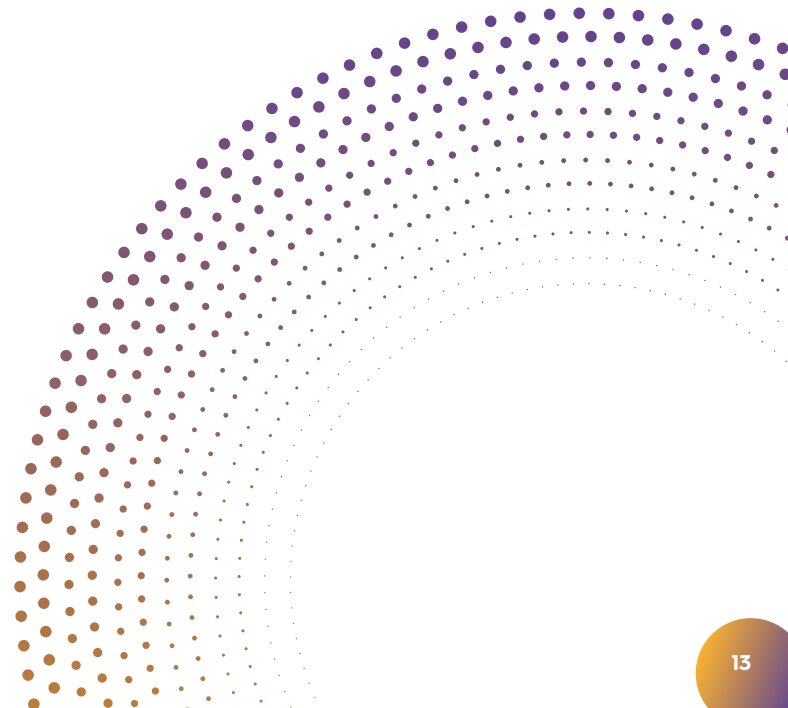
Total FSTP funding

50.000 €

Brief testimonial about participation in the programme, including interaction with AI4Media and coaches, if you'd recommend such programmes to others.

We thank the AI4Media project, coaches and project staff for this opportunity and their valuable advice. The management and communication of consortia comprised by many partners like AI4Media, and projects that include sub-granted projects, are very difficult and time consuming. However, AI4Media partners have managed and communicated the overall process with great success, assisting us to have a good output. Finally, we have recommended such programmes to our colleagues (within IHU university), to partners from other universities, as well as to partners from companies.

People involved in the project



InPreVi Project

Full title of the project

Inauthentic web traffic Prediction in Video marketing campaigns for investment optimization

Project tagline/ slogan

Analytical classification methods for fraudulent and poor quality web traffic identification in video ad marketing campaigns

Project Track

Application

Funding period

1 March 2022 - 31 October 2022

Beneficiary lead name

JOT INTERNET MEDIA

Type of organisation

SME

City & Country

Madrid, Spain

Website

<https://www.jot-im.com/>

Main contact

Fernando Perales

Position in the organisation

Head of Research Lab

Other people involved in the project

Marta López (Data scientist)

LinkedIn profile

<https://www.linkedin.com/company/jot-internet-media>

Twitter profile

@JotInternet

Organisation logo / project logo



Brief description of the project

The focus of this project is the analysis of fraudulent traffic originating from YouTube. The objective is to identify and prevent such traffic while also uncovering correlations that can improve its quality. The project involves the creation of a comprehensive dataset through table combination techniques. A multivariate analysis, correlation analysis, and the development of predictive models using machine learning techniques were conducted. These efforts collectively aim to enhance the understanding and estimation of the quality value associated with the traffic, contributing to a more effective prevention and management approach.

What was the challenge?

The main objectives of the project were to reduce the presence of inauthentic users, optimize targeting for increased efficiency, make data-driven decisions based on real interactions, and enhance ad results by identifying and targeting relevant audiences. By implementing these measures, we ensure that genuine traffic is directed to our clients' websites, effectively mitigating the occurrence of SPAM traffic on the YouTube platform. By focusing on these objectives, we aimed to fortify our business operations and establish a robust foundation for future growth and success.

What results did you deliver (the solution)?

Preliminary analysis revealed a decline in Google's invalidations and an improvement in traffic quality over time, likely due to algorithm enhancements. Keyword categories play a crucial role, as some exhibit higher invalidation rates, impacting the traffic quality score. The day of the month and the targeted country also influence quality assessment, with potential traffic leaks to non-targeted countries, possibly due to VPN usage. Thus, efforts should focus on high-quality categories, improving audiences and selecting optimal ad display days. This approach will help enhance the traffic quality score.

What is the impact of your project for the AI and media ecosystem?

Thanks to the development of the InPreVi project, the digital marketing team has evaluated the web traffic quality generated in this channel depending on the most relevant variables for the publishers such as location and categories. It has been found that the percentage of traffic sources in this video channel do not correspond to human users and it is needed to define very precisely both the targeted audience, the category of the keywords and the geo location of the campaigns. Even in this case there is significant chances to get traffic from external sources.

What was the main benefit of participating in the AI4Media funding programme?

The AI4Media programme has contributed to speed up the development of the project thanks to both the financial support for 9 months, the deep definition of the project plan and goals and the technical support to solve the challenges and bottlenecks during the

development process. In addition to that, this work has also enabled the dissemination of the main achievements in a conference and peer-review journal, so the brand awareness of the company has also benefited.

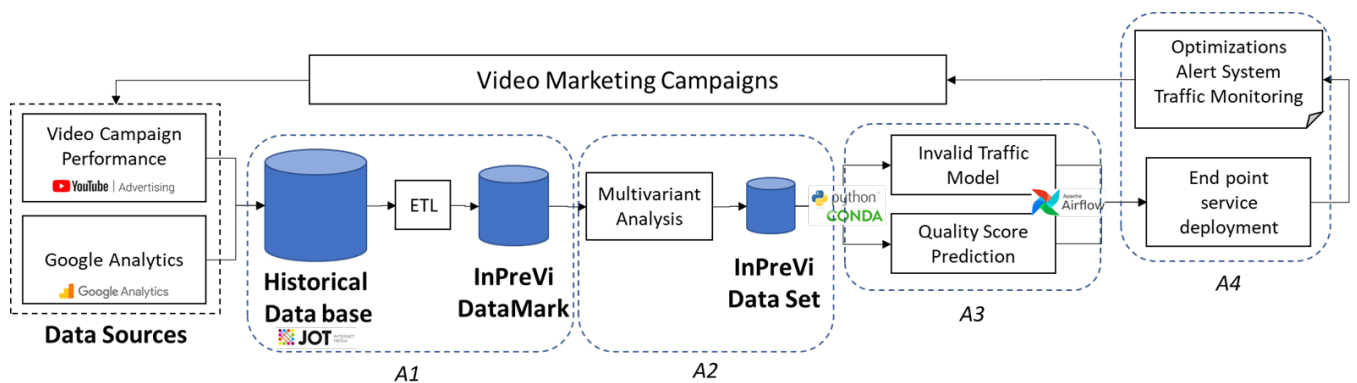
What you did and achieved that would have been difficult/impossible without this funding?

Thanks to the funding received, several aspects have significantly facilitated the progress and success of the project. Firstly, the allocated funding enabled us to establish a well-defined and structured framework, enhancing the project's efficiency and productivity. Additionally, the regular monitoring meetings provided invaluable guidance and advice, contributing to the project's overall development. The funding has played a crucial role in generating insightful conclusions and promoting diverse perspectives, ensuring a comprehensive and robust outcome. Without this financial support, achieving such progress and attaining these outcomes would have been challenging, if not impossible.

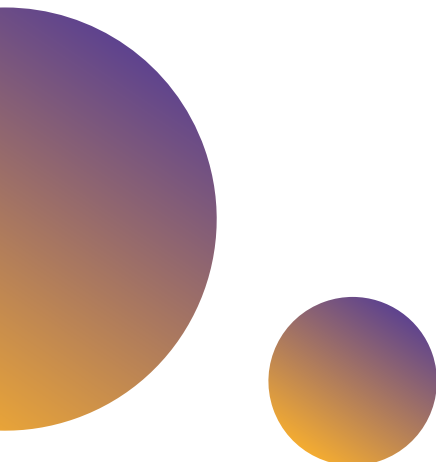
What's next for the project?

The next phase of our project will focus on implementing the insights gained to elevate the quality of our traffic. By applying these findings, we will strive to achieve a better balance in our data and uncover valuable new insights. Given the significant impact of keyword categories, we have planned to conduct clustering analysis. This analysis will enable us to identify and filter out categories that are more susceptible to invalidation, thereby enhancing overall traffic quality. Through this strategic approach, we aim to make more informed decisions and drive continuous improvement in our operations moving forward.

Figure 1. Overview of project's architecture



Overview of project's architecture



Relevant lessons learnt

An important lesson has been derived from our analysis: notable variations in conversions serve as indicators of the presence of SPAM traffic. This newfound understanding offers a fresh perspective for tackling diverse business areas. Furthermore, we have recognized the initial oversight regarding the impact of skewed data on outcomes. As a result, our predictive models have been significantly affected, emphasizing the imperative for enhancements while striving to attain a balanced dataset and elevate traffic quality. These efforts will contribute to more accurate insights and improved performance within our operations.

Total FSTP funding

€49,850

Brief testimonial about participation in the programme, including interaction with AI4Media and coaches, if you'd recommend such programmes to others.

The participation of the company in the AI4Media programme has allowed us to perform a deep analytical analysis of a new business unit. The technical and coaching support of the reviews and coaches have motivated the team to develop the project with a methodological approach to meet the business goals and technical objectives. The need of project definition, reporting and external evaluation is a critical aspect that may generate some pressure and overload but are essential to ensure that the project is developed according to a plan. In this sense, we would recommend to participate in this type of programmes as the problem is perfectly defined, business-motivated and the companies are granted with financial support to work and generate the solution and insights needed.

People involved in the project



NeurAdapt

Full title of the project

Development of a Bio-inspired, resource efficient design approach for designing Deep Learning models

Project tagline/ slogan

A Bio-inspired, resource efficient design approach for designing Deep Learning models

Project Track

Research

Funding period

1 March 2022 - 31 February 2023

Beneficiary lead name

Irida Labs

Type of organisation

SME

City & Country

Patras, Greece

Website

<https://iridalabs.com/>

Main contact

Nikos Fragoulis

Position in the organisation

Co-Founder & CTO

Other people involved in the project

Ilias Theodorakopoulos Sr. Data Scientist

LinkedIn profile

<https://www.linkedin.com/company/irida-labs/>

Organisation logo / project logo



Brief description of the project

The goal of the NeurAdapt project is to explore a new path in the design of deep Convolutional Neural Networks (CNNs), inspired by recent advances in the field of biological interneurons that highlight the importance of inhibition and random connectivity to the encoding efficiency of neuronal circuits.

We focused on the development and evaluation of a method to train dynamic CNN models that can facilitate adjustable inference effort controlled via a single parameter during run-time. The results of our tests showed that the proposed method could generate models with adjustable accuracy/complexity balance without retraining.

What was the challenge?

The project's main challenge was to create a new paradigm for bio-inspired convolutional layers with enhanced functional diversity, yet compatible with standard training algorithms and high-throughput inference H/W.

We also had to validate the developed methods on a variety of small larger problems, proving the efficiency and efficacy of this approach compared to conventional Convolutional Neural Network architectures.

What results did you deliver (the solution)?

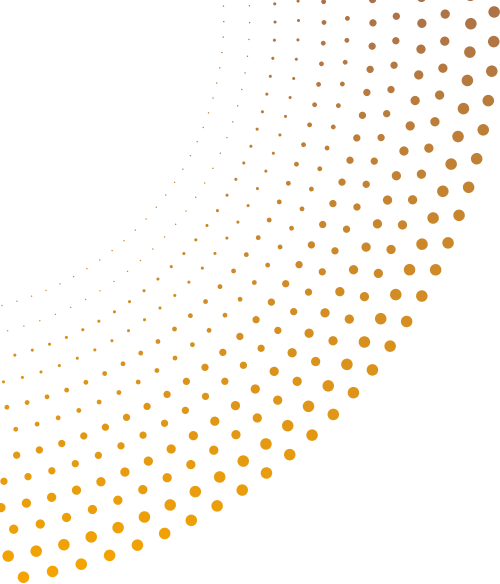
We delivered a new methodology for designing efficient deep CNN architectures regardless of the specific task and target domain, that addresses the need for flexible computational systems in dynamic environments with changing resource availability.

The proposed configuration was validated by using small CNN models and a basic visual classification task to establish a proof of concept and derive some initial conclusions. The evaluation results were very encouraging, indicating that the dynamic models achieved similar peak accuracy compared to reference models with comparable conventional architectures, at a significant discount in the required operations. The positive results were verified on smaller and deeper models in challenging classification tasks.

What is the impact of your project for the AI and media ecosystem?

Our work will be made available to the AI4Media ecosystem, via the AI on Demand Platform (AIODP), in the form of the following two assets:

1. An "As A Service" asset, where AI4Media ecosystem members can reach us to get access to a Dynamic Computation CNN, feature extraction network for image classification, being part of our PerCV.ai framework platform component, where together with an SVM scheme will be possible to implement a few-samples image-classification scheme.
2. As a free to use executable, where AI4Media ecosystem members can have a hands-on experience on the NeurAdapt technology, by using a small and fast feature extraction network trained on a CIFAR-10 database. This asset has been uploaded in Zenodo platform (<https://zenodo.org/record/7821075#.ZDZ5qy8RrTE>).



What was the main benefit of participating in the AI4Media funding programme?

The programme allowed us to allocate resources towards essential development, data acquisition, and testing, ultimately accelerating the progress of our research. Additionally, the programme's emphasis on visibility significantly boosted the recognition of our work within the scientific community, enabling to share our findings with a broader audience. Moreover, the regular feedback and guidance from our coach have been invaluable in shaping the research approach, refining methodologies, and ensuring the highest quality in our scientific contributions.

What you did and achieved that would have been difficult/impossible without this funding?

We are immensely grateful for the funding received from AI4Media as it has been the critical pillar supporting our research. Without this funding, our project would have remained stagnant, hindering progress and impeding the completion of our groundbreaking research.

Figure 1. Modified convolutional cell as the main building block for training CNNs with dynamic pruning capabilities.

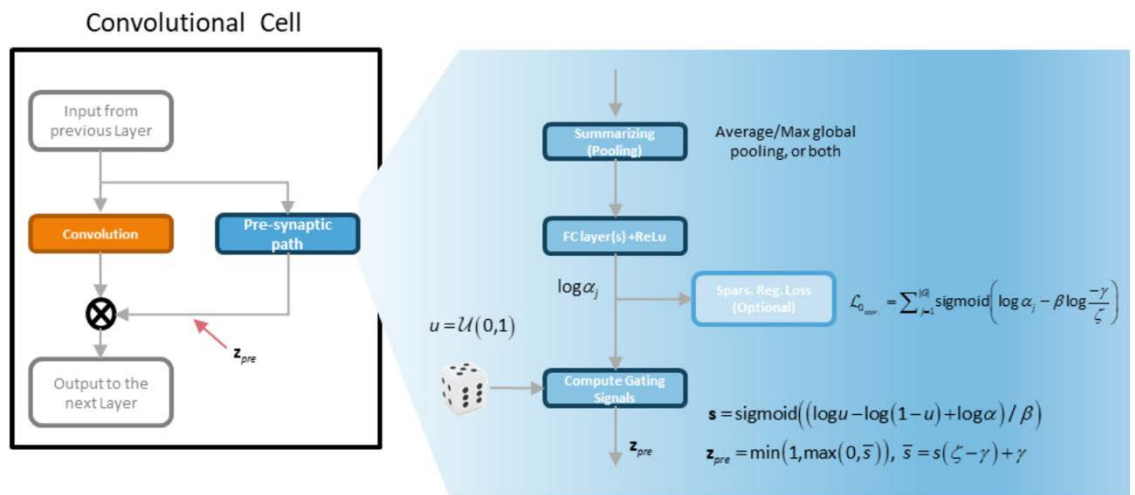
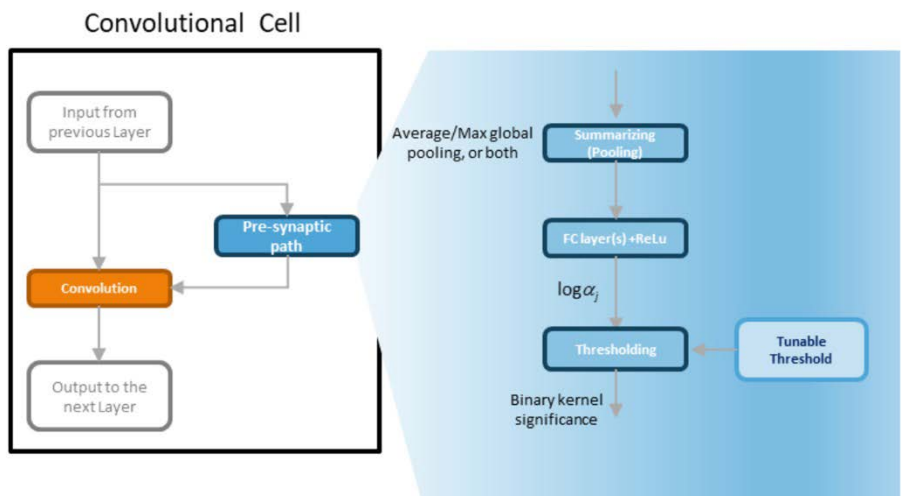


Figure 2. Inference mechanism for the modified convolutional cell with dynamic pruning. Only the significant kernels as decided by thresholding the log α signal are computed.





What's next for the project?

Next steps for the project would involve its incorporation to PerCV.ai Vision AI Platform developed by Irida Labs. PerCV.ai is a complete software and services platform that enables the deployment of edge Vision AI at scale.

The proposed methodology can further enhance the platform's capabilities, improving the accuracy and together with an SVM scheme it will be possible to implement a few-samples image-classification scheme.

Relevant lessons learnt

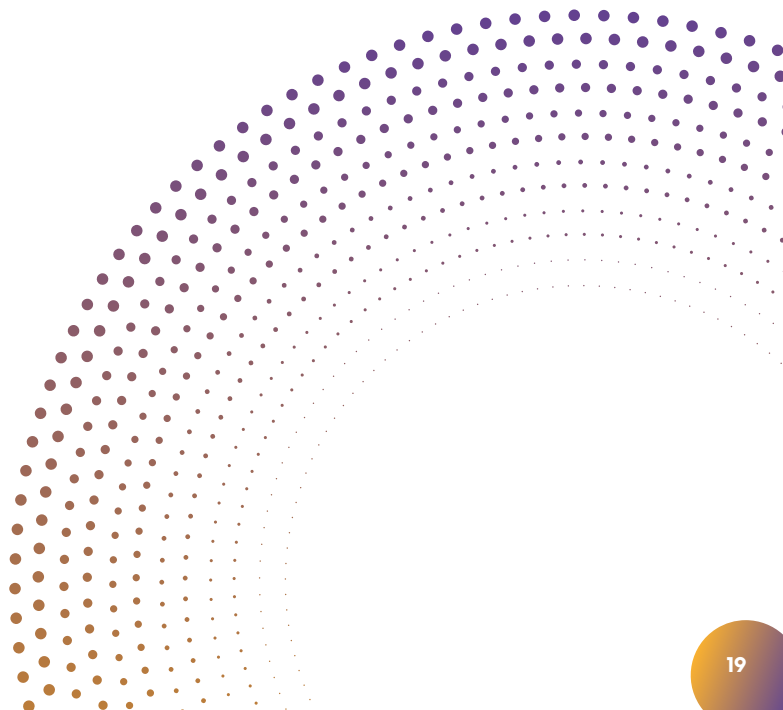
The experience of being part of AI4Media has emphasized the significance of considering the broader context, user needs, and feedback loops, which has shaped our understanding of how to effectively leverage the programme's resources to create meaningful outcomes.

Total FSTP funding

€50,000

Brief testimonial about participation in the programme, including interaction with AI4Media and coaches, if you'd recommend such programmes to others.

As the project leader of our Irida Labs participating in AI4Media, I want to express my heartfelt gratitude to our mentor for his invaluable guidance and support. The funds received through AI4Media have been instrumental in propelling our innovation forward. Our mentor's expertise and mentorship have played a pivotal role in shaping our success. Thank you for being an indispensable part of our journey.



RobaCOFI

Full title of the project

Robust and Adaptable Comment Filtering

Project tagline/ slogan

Making text content moderation tools easy to apply and quick to adapt to new data, new domains and new languages.

Project Track

Research

Funding period

1 March 2022 - 28 February 2023

Beneficiary lead name

Jožef Stefan Institute

Type of organisation

Public research institute

City & Country

Ljubljana, Slovenia

Website

<http://ijs.si/>

Main contact

Matthew Purver

Position in the organisation

Senior Researcher

Other people involved in the project

Senja Pollak

Andraž Pelicon

Boshko Koloski

Timen Stepišnik Perdih

Marko Pranjic

Mladen Karan

Ravi Shekhar

Jaya Caporusso

Bojan Evkoski

Marko Robnik-Sikonja

Brief description of the project

Online platforms that publish user-generated content (from news publishers who include reader comments below articles, to social media) have the difficult task of moderating that content to prevent toxic speech, misleading information and illegality. This is hard to do manually, given the high data volumes; automatic tools tend only to exist for specific settings and for the English language; and developing new tools from scratch requires a lot of data and time. Our aim was to develop moderation models that could be quickly adapted to new domains, new data and new languages, allowing people to build their own tools quickly and cheaply.

What was the challenge?

We had several challenges! User-generated content is notoriously fast-changing and unpredictable, so the task of content moderation is difficult in the first place. Transferring learning across domains and languages is also challenging, as concepts and language can be quite country- and society-specific.

What results did you deliver (the solution)?

We developed a massively multilingual base model, trained on available datasets in a range of languages including English, German and Arabic. This model can be fine-tuned on new languages without labelling the data, and then improved quickly on small numbers of examples using human-in-the-loop active learning. Our base model, code for fine-tuning and learning, and our labelled datasets have all been publicly released.

What is the impact of your project for the AI and media ecosystem?

Our base model, code for fine-tuning and learning, and our labelled datasets have all been publicly released, and we are working with AI4Media to include them into the project ecosystem.

What was the main benefit of participating in the AI4Media funding programme?

The AI4Media programme provided us with a great opportunity to do a focused piece of development work that falls between research and practical application. The funding and the programme helped support us to turn research results into more practical tools.

What you did and achieved that would have been difficult/impossible without this funding?

The AI4Media funding supported us to work on something quite focused and short-term compared to a typical research project, but quite in-depth and challenging compared to a typical development & implementation project - it can be hard to find funding for this kind of work over this kind of timescale, so this programme was a really good fit for what we needed. We built on our research results from a previous H2020 project (EMBEDDIA, 825153) and produced a range of practical, useful tools that would otherwise have remained as research proof-of-concept implementations.

Organisation logo / project logo



What's next for the project?

During the project we've made contacts with potential industry end users, including in Slovenia and in Croatia, and we'll be pursuing those with an eye to getting the tools used in the real world. We'll also be continuing our experiments, hoping to improve the effectiveness of our active learning methods and make the performance even better.

Relevant lessons learnt

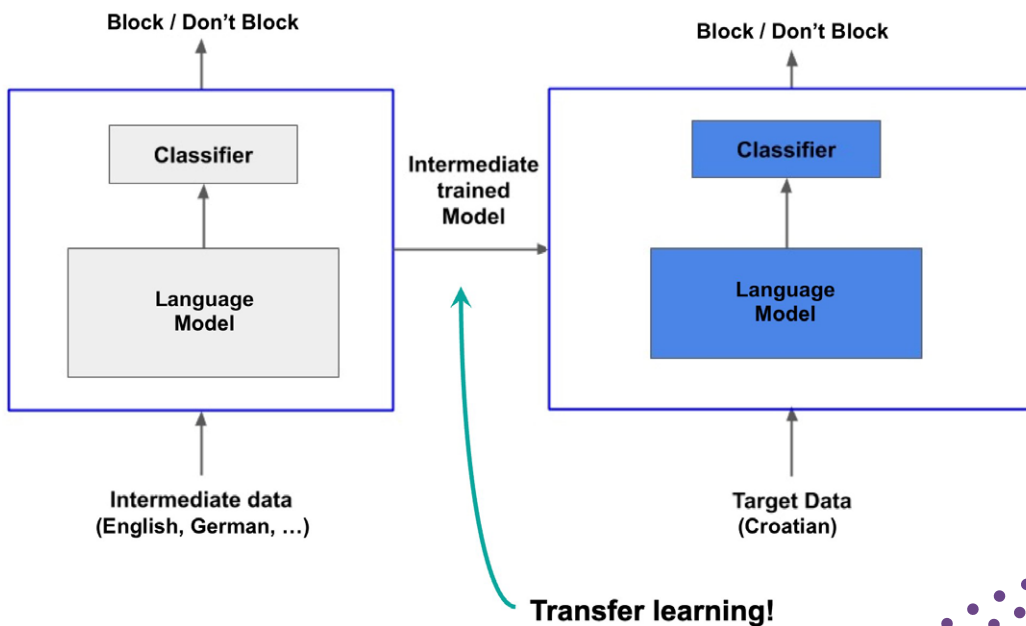
Many techniques that seem promising in specific research context turn out not to work so well in all real-world settings – we tried many experiments and got a lot of negative results as well as the positive ones! Contacting potential users and interested parties early is very helpful – discussions can take time.

Total FSTP funding

€50,000

Brief testimonial about participation in the programme, including interaction with AI4Media and coaches, if you'd recommend such programmes to others.

We very much enjoyed the project and our interactions with the AI4Media team. Our sessions with our mentor were really helpful. The management process was relatively light-touch and easy to work with. We'd certainly recommend it to others.



People involved in the project



SMAITE

Full title of the project

Preventing the Spread of Misinformation with AI-generated textual Explanations

Project tagline/ slogan

Can AI-generated text explain why a claim is wrong or correct?

Project Track

Research

Funding period

1 March 2022 - 28 February 2023

Beneficiary lead name

University of Manchester

Type of organisation

University

City & Country

Manchester, United Kingdom

Website

<https://www.manchester.ac.uk>

Main contact

Viktor Schlegel

Position in the organisation

(Honorary) Lecturer

Other people involved in the project

Riza Batista-Navarro

Hao Zhang

Abdullah Khered

Hao Li

LinkedIn profile

<https://www.linkedin.com/in/viktor-schlegel-585a59172/>

Organisation logo / project logo

MANCHESTER
1824

The University of Manchester

Brief description of the project

Assessing the veracity of claims is a vital capability in the modern world, but it is a task that the public is often ill-equipped to do. Experts cannot verify the validity of claims instantaneously: this gives the opportunity to research into automated claim and fact verification. We take a novel approach to developing AI-driven fact verification systems, with explainability at their core. We leverage the large availability of high-quality human-written claim verification articles from specialised journalist outlets such as Full Fact to create a dataset for the task of explainable fact verification. We used the data to develop a fact verification system underpinned by deep learning based, generative language models that will generate human-understandable explanations that contextualise their verdicts.

What was the challenge?

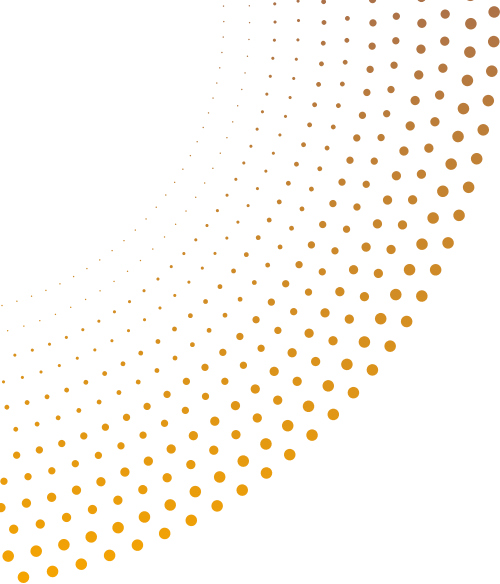
State-of-the-art research on fact verification mostly focuses on the capability to identify misleading claims. However, for end-users, it is important to provide explanations why exactly a claim was identified as wrong. These explanations serve both as a context for the claim and as an insight into the reasoning process that led to the veracity decision. Existing fact verification approaches rely on deep learning-based models optimised on large static datasets to automatically classify whether a claim is true based on retrieved supporting evidence. It is however unclear whether end-users will accept these verdicts without further context.

What results did you deliver (the solution)?

We developed a deep-learning based solution for fact verification and using state-of-the-art generative AI models. We evaluated the quality of generated explanations in a large-scale human-centred empirical study. Finally, we optimised automated metrics that predict different dimensions of quality in automatically generated explanations.

What is the impact of your project for the AI and media ecosystem?

Our work can contribute to multiple use cases of AI4Media and arising tools and artefacts will be made publicly available to be readily integrated into the AI4EU platform. Specifically, we directly contribute to the AI4Media project use case related to AI for social media and against disinformation as we aim to develop a system for automated fact verification. Different components can be integrated into the Truly Media collaborative fact verification platform, for example to assist humans in retrieving relevant information, deciding whether a claim is misleading and providing supporting evidence for the decision. This potential for human-computer collaboration also feeds into the use case on AI for Human Co-creation, as it equips use case, as it equips journalists that investigate the veracity of claims with human-centred metrics to measure the potential impact of their articles.



What was the main benefit of participating in the AI4Media funding programme?

The main contribution from AI4Media was two-fold. Firstly, we are thankful for the high-quality coaching provided by our mentors which further gave the ability to expand our research network. Secondly, the funding provided allowed us to carry out the evaluation of explanations at scale, by means of crowd-sourcing. This would have been difficult to achieve otherwise.

What you did and achieved that would have been difficult/impossible without this funding?

As mentioned previously, the funding provided allowed us to tap into the power of crowd-sourcing for data annotation. This would have been difficult to achieve otherwise. Furthermore, we employed two part-time RAs who assisted us in delivering the project. This was especially helpful for labour-intensive tasks such as data scraping, pre-processing, etc. Without the funding, the project would have been only possible, at a much smaller scale, if at all.

What's next for the project?

We will aim to conduct a case-study with our regional partner FullFact to see whether any of our developed tools, artefacts and approaches can be of use in their day-to-day fact verification work.

Relevant lessons learnt

You can never plan ahead enough! For example, with all the anticipated risks, we still faced a significant delay because of some billing-related issues related to the crowd-sourcing platform. Beyond that, crowd-sourcing more generally is not very easy to "get right". The technical expertise of our AI4Media mentors as well as their willingness to link us to domain experts proved crucial to the delivery of

Claim

Covid is not real.

Mode

Google API Stored Corpus

EVIDENCE

Covid-19 is real and not a government euthanasia policy - Full Fact

NOT REAL NEWS: Finland is not launching 4-day working week ...

Not real news: Finland is not launching 4-day working week | The ...

Not Real News: Inaccurate data spreads about COVID ...

This quote attributed to Boris Johnson is not real - Full Fact

Fact Check-'VAIDS' is not a real vaccine-induced syndrome, experts ...

There is no COVID-19 "casedemic." The pandemic is real and ...

This map is a forecast based on past data, not real-time satellite ...

Offline: COVID-19 is not a pandemic

Is technology killing 'real' relationships? - Hindustan Times

RESULTS

There is no COVID-19 "casedemic." The pandemic is real and not a government euthanasia policy

the project, for which we are thankful.

Total FSTP funding

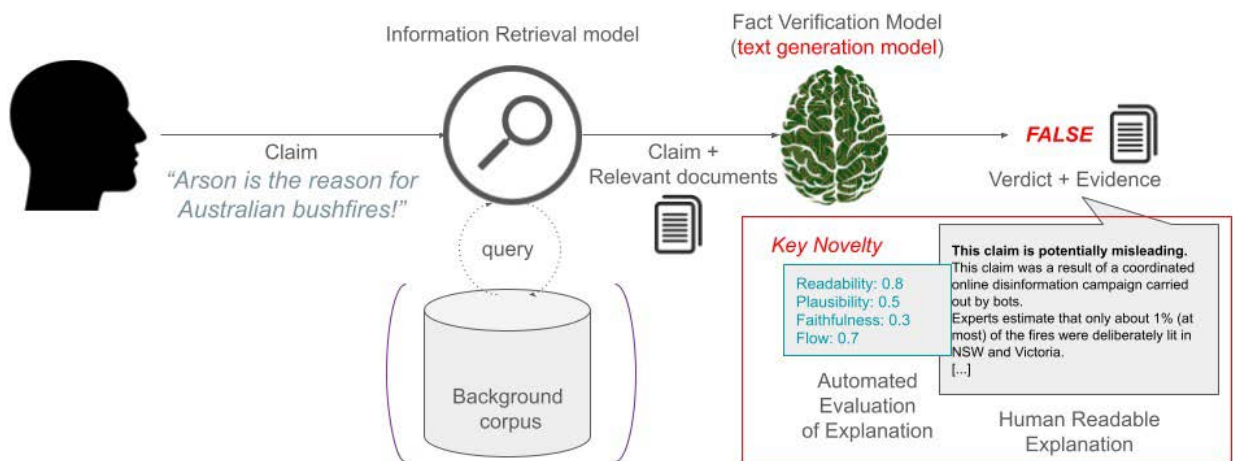
€49,565

Brief testimonial about participation in the programme, including interaction with AI4Media and coaches, if you'd recommend such programmes to others.

Participating in the AI4Media programme benefited our research team in a number of ways. Apart from the opportunity to pursue a research question that we were passionate about and were struggling to get funded through UK councils, the programme provided us with an opportunity to network with other organisations who are also working in the area of AI applications in media. We are also grateful for having a very supportive coach who gave us constructive feedback every step of the way. AI4Media also encouraged us to think outside of the box, in exploring options on how we can disseminate our work outside of academia. We would definitely recommend such a programme to other academics and practitioners.

SMAITE

1. Fact checking tool that "writes" explanations based on evidence
2. Human-centred experiments to produce metrics for assessing the quality of explanations



Fan et al: ELI5: Long Form Question Answering. ACL. 2020.

citizenship instead of censorship!

2

People involved in the project



TRACES

Full title of the project

Automatic recognition of human-written and deepfake-generated text disinformation in social media for a low-resourced language

Project tagline/ slogan

Tracing a Route: Unveiling Human Disinformation via Deceptive Language Signs and Traces of Textual Deepfakes in Lower-Resourced Languages

Project Track

Research

Funding period

1 March 2022 - 28 February 2023

Beneficiary lead name

Sofia University "St. Kliment Ohridski",
GATE Institute

Type of organisation

Research institution

City & Country

Sofia, Bulgaria

Website

<https://traces.gate-ai.eu/>

Main contact

Irina Temnikova

Position in the organisation

Experienced researcher

Other people involved in the project

Ruslana Margova, Silvia Gargova, Milena Dobрева, Ivan Koychev, Ivo Dzhumerov, Veneta Kireva, Tsvetelina Stefanova, Hristiana Krasteva

Twitter profile

https://twitter.com/project_traces

Organisation logo / project logo



Brief description of the project

TRACES created solutions for detecting human disinformation and textual deepfakes in lower-resourced languages, with Bulgarian as a use case. We recognize disinformation automatically by the presence of language markers of deception. TRACES produced a lot of results, most of which can be used by others: 1) a prototype web tool for detecting disinformation, untrue content, and texts, generated by language models, 2) new machine learning models, 3) a larger hierarchical classification of linguistic markers of deception, 4) expressions lists, 5) several annotated datasets - some of which manually fact-checked, and 6) Python scripts to pre-process new datasets. A winter school 7) was also organised to train Bulgarian citizens and journalists to recognize textual deepfakes, disinformation, and deception.

What was the challenge?

TRACES addresses several challenges:

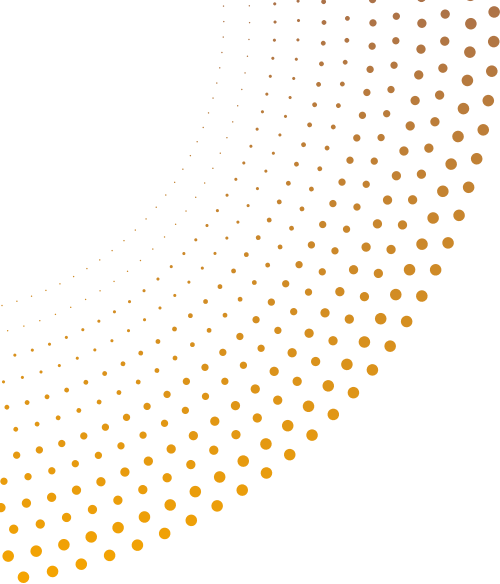
- Disinformation was lately addressed only for containing fake information or being harmful, but not as intentionally spreading deception.
- There was no knowledge if textual deepfakes existed in Bulgarian social media, and no research on textual deepfakes, nor textual datasets and language models-generated datasets for Bulgarian.
- There were no guidelines on how to build disinformation detection solutions for lower-resourced languages.
- There were social media datasets in Bulgarian with very few messages annotated as fake.
- There were no linguistic and psycholinguistic research and resources on deception for the Bulgarian language.

What results did you deliver (the solution)?

- A web tool for detecting disinformation and textual deepfakes in Bulgarian.
- Machine learning models.
- Datasets (from Telegram and Twitter), annotated automatically for markers of deception.
- A manually annotated social media dataset in Bulgarian for untrue information and disinformation.
- Python scripts for cleaning, anonymizing, and automatically annotating with deception markers new datasets in Bulgarian or in other languages.
- A hierarchical classification of deception markers with suggestions for automatization, adaptable to other languages.
- Presentations for the general public, journalists, and a winter school.
- Several news articles in Bulgarian.
- 2 accepted research articles.
- Guidelines for adapting TRACES' results to other lower-resourced languages.
- Annotation guidelines for journalists.

What is the impact of your project for the AI and media ecosystem?

TRACES project created several solutions, which can be adapted to other languages, especially lower-resourced ones, which can be used by members of AI4Media. The solutions include all the results mentioned above, but the results with a more direct impact are the guidelines for



other languages, the Python scripts, and the hierarchical classification of markers of deception. TRACES also performed an extensive dissemination campaign, advertising widely AI4Media in Bulgaria and abroad.

What was the main benefit of participating in the AI4Media funding programme?

The TRACES team received a lot of assistance from AI4Media, with the main contributions being:

- Active legal assistance.
- Funding.
- Access to interesting, useful news and information.
- The possibility to do this interesting research.

What you did and achieved that would have been difficult/impossible without this funding?

Without AI4Media funding we could not have been able to:

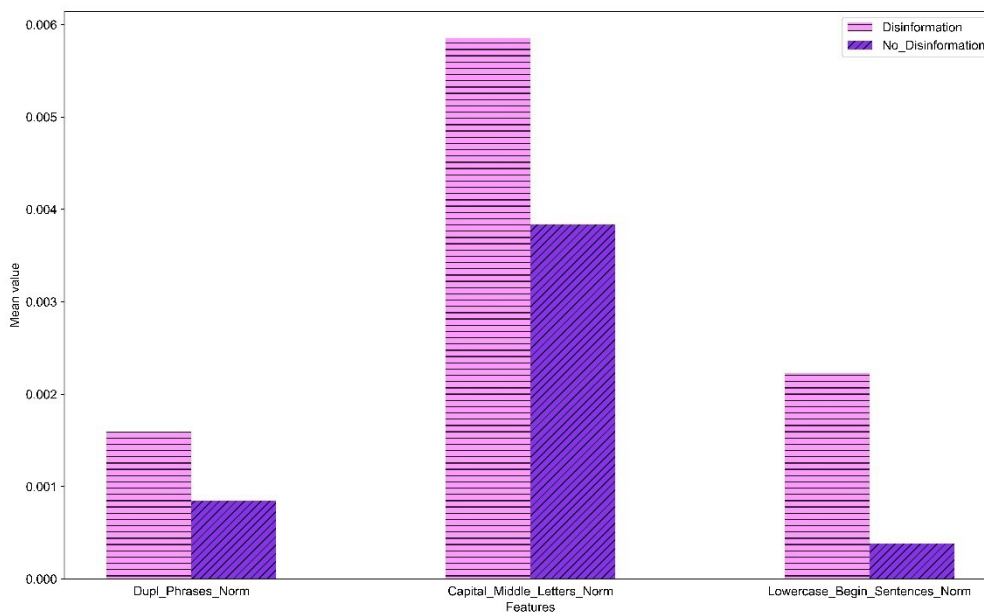
- Travel to conferences, pay for journal articles.
- Organise the winter school.
- Afford spending our time on this research.
- Afford hiring and paying human annotators.
- Afford paying for legal assistance of specialized lawyers in Bulgaria.
- Afford paying to external speakers at the winter school.

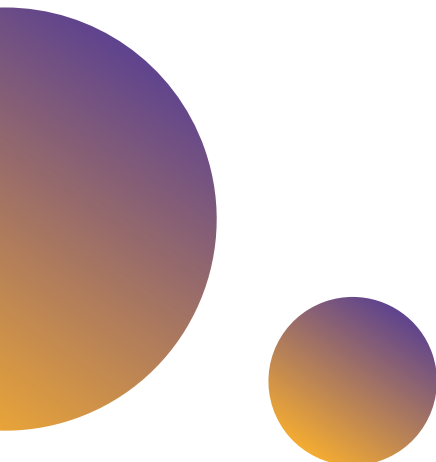
What's next for the project?

We already started working and plan to work on the following new topics:

- Improving the machine learning results for detecting textual deepfakes, generating more data.
- Better characterization of deception by proposing a score.
- Eventual transfer to another lower-resourced language.
- Improving the web tool, which was a prototype at Technology Readiness Level 4 (technology tested in lab).
- Creating courses on how to recognize textual deepfakes in Bulgarian.
- Applying TRACES code on another domain (disaster messages).

The screenshot shows a web interface for a text analysis tool. At the top, it says 'Tool for recognizing untrue information, disinformation and deepfake texts'. There are language selection buttons for 'EN' and 'BG'. Below that, there are links for 'Tool' and 'Terms and conditions'. A text input field contains the Bulgarian text 'Нямам представа къде изчезнаха бисквитките.' Below the input field is an 'Analyze text' button. The results section shows three warning messages: 1) The text was automatically generated by GPT-2 or ChatGPT with 47.17% probability. 2) The text contains untrue information with 90.42% probability. 3) The text contains disinformation with 99.96% probability. A final information message states: 'Disinformation is false information deliberately spread to deceive people.'





Relevant lessons learnt

We learned a lot of useful information and lessons from our experience. Specifically, we learned to not promise too much, as work may get delayed.

We also learned that delays are possible and that they may be due to people's personal difficulties or problems with computing infrastructure. We realized that writing a Data Management Plan and securing good quality legal considerations can be more challenging than anticipated. We realized that everything is possible if you are interested in your work and that significant results can be achieved even with a predominantly junior team (provided that there are senior consulting team members).

Total FSTP funding

€50,000

Brief testimonial about participation in the programme, including interaction with AI4Media and coaches, if you'd recommend such programmes to others.

The TRACES team highly recommends participating in the programme. We have accomplished and learned a great deal as one of the open call winners.

We are immensely grateful to the AI4Media partners and coaches for their professionalism, prompt responses, adaptability, and eagerness to assist us during challenging circumstances.

People involved in the project



VRES

Full title of the project

Varia Research

Project tagline/ slogan

Enabling efficient journalistic online research

Project Track

Application
Research

Funding period

1 March 2022 - 31 October 2022

Beneficiary lead name

Varia UG

Type of organisation

Limited Liability Company

City & Country

Munich, Germany

Website

www.varia.media

Main contact

Georg Horn

Position in the organisation

Co-Founder & CEO

Other people involved in the project

Stefan Hensel

Daniel Kiss

Nilabhra Roy Chowdhury

LinkedIn profile

<https://www.linkedin.com/company/variamediagroup>

Organisation logo / project logo



Brief description of the project

Varia Research is a SaaS application that helps journalists, content creators, business analysts or academics to streamline their online research processes. With Varia Research, media monitoring and research organization come together in one sleek integrated application, allowing for significant efficiency gains in the online research process. Research information such as bookmarks, notes, files, or contacts can all be stored and organized in dossiers - allowing to find and retrieve relevant documents whenever needed. Machine learning and AI are deeply embedded in the product, granting further benefits such as automated summaries or analyses for each document stored in Varia Research.

What was the challenge?

The main challenge was to capture the use case precisely and to understand where machine learning can be best leveraged in the product. Furthermore, the development and commercialization of the initial product all had to take place during the funding period, with a minimal team.

What results did you deliver (the solution)?

Varia Research 1.0 was launched during the project period. As a freemium SaaS product it is ever since available for journalists and online/desk researchers of all kinds.

Prior to that, extensive user research was conducted to better understand the use case and fields of application from a user's perspective.

What is the impact of your project for the AI and media ecosystem?

Varia Research brings AI in the form of NLP to the frontline. The product is deliberately designed in a way that individual users can access and leverage it - even at zero cost. We think it is very important to not only think in large scale products and newsroom level software in media, as the sector depends heavily on individual contributors and freelancers.

What was the main benefit of participating in the AI4Media funding programme?

Funding, guidance, visibility. We appreciated the time and resources that the programme and the associated members have dedicated to our project greatly!

What you did and achieved that would have been difficult/impossible without this funding?

Most likely the entire project would not have happened without the AI4Media funding. It is extremely difficult for software products or startups with a news media or journalism focus to attract funding from private, institutional lenders. Funding opportunities like AI4Media can be essential in getting early-stage projects off the ground, giving an advance to bootstrapped ventures.



What's next for the project?

Varia Research is starting to make its impact in the journalism world, with more and more users utilizing the product on a daily basis. The offering will further be extended to more languages and more use cases, to better help journalists and other online researchers gain even more efficiency.

Relevant lessons learnt

It's never about "AI" alone, it's about the holistic use case. This is an old lesson, but it got reinforced over and over during the development of Varia Research, and the user interviews plus feedback sessions that went into the development.

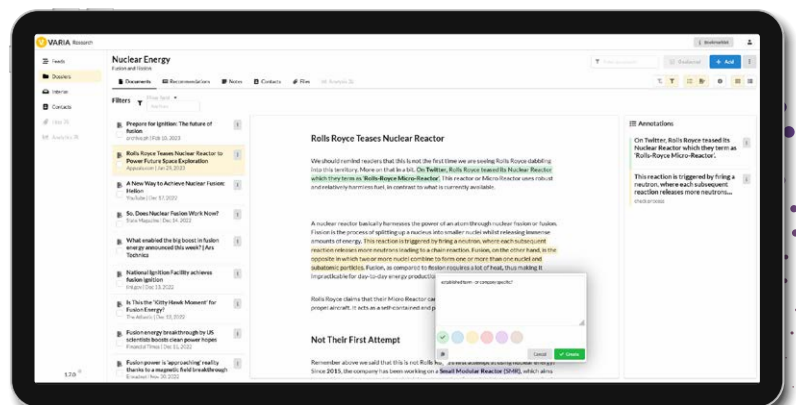
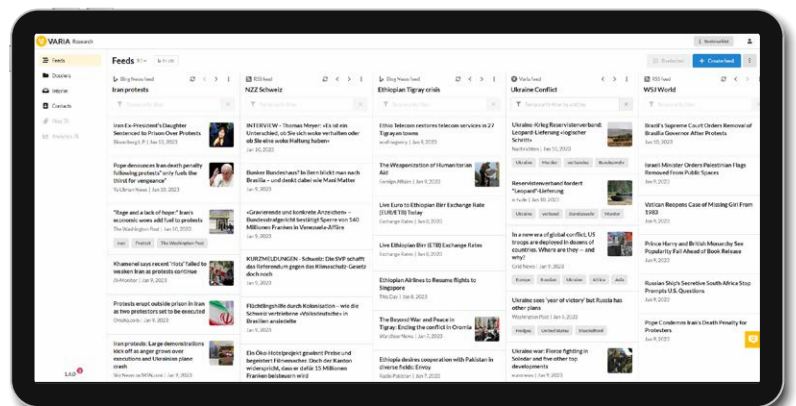
Total FSTP funding

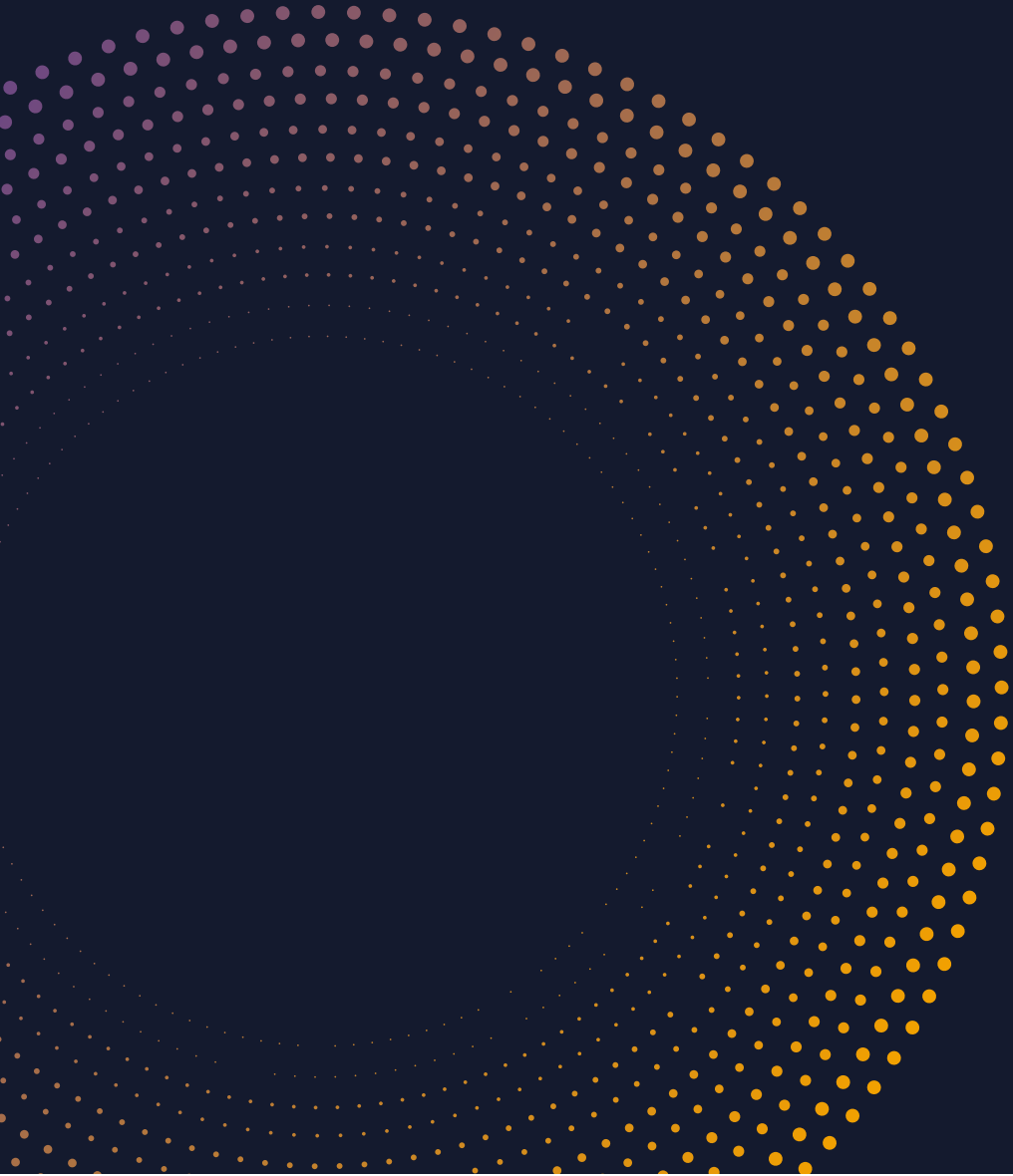
€50,000

Brief testimonial about participation in the programme, including interaction with AI4Media and coaches, if you'd recommend such programmes to others.

We greatly appreciated the pragmatism of the AI4Media project staff and coaches. It's not always easy to participate in large EU based programmes, the administrative effort can be overwhelming. The guidance and support provided by the team made our participation a success!

People involved in the project





Our Consortium



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 951911

info@ai4media.eu

www.ai4media.eu