



D7.4

Final version of the integration result with the AI-on-Demand Platform

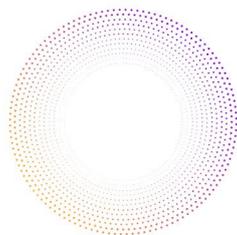
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Abstract	This deliverable is the final version of AI4Media’s integration with the European AI-on-Demand Platform. Being of type demonstrator, it essentially consists of the AI4Media assets in the AI Assets Catalog, the AI-Cafe lectures, the AI4Media models in the AI-Builder Marketplace, a concept for interoperability with other media platforms, and examples for the technical integration of models into other media platforms. Altogether, these items show that the integration is working as intended.
Keywords	AI-on-Demand Platform, AIoD, integration, AI Assets Catalog, community building, AI4EU Experiments, interoperability, AI-Cafe, AI-Builder, AI Community Portal

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Table of Abbreviations and Acronyms

Abbreviation	Meaning
AI	Artificial Intelligence
ADRA	AI, Data and Robotics Association
AI4EU	Project: A European AI-on-Demand Platform and Ecosystem
AIoD	AI-on-Demand Platform
API	Application programming interface
AUTH	Aristotle University of Thessaloniki
CERTH	Centre for Research and Technology Hellas
Claire	Confederation of Laboratories for Artificial Intelligence Research in Europe
CNR	Consiglio Nazionale delle Ricerche
CoEC	Center of Excellence in Combustion
CPU	Central Processing Unit
D	Deliverable
DoA	Description of action
FHG-IAIS	Fraunhofer Institute for Intelligent Analysis and Information Systems
FHG-IDMT	Fraunhofer Institute for Digital Media Technology
FocusCoE	Concerted action for the European HPC CoEs
GAR	Grassroots Arts and Research
GDPR	General Data Protection Regulation
GPU	Graphics Processor Unit
gRPC	The acronym is derived from Google Remote Procedure Call, but is used as a proper name
H2020	Horizon 2020 Framework Programme
HiDALGO	HPC and Big Data Technologies for Global Systems
ICT	Information and Communication Technologies
JR	Joanneum Research
JSON	JavaScript Object Notation
KG	Knowledge graph
KI.NRW	Competence platform for artificial intelligence in North Rhine-Westphalia
KPI	Key performance indicator
KUL	Katholieke Universiteit Leuven
MBD	MindBugs Discovery
ML	Machine learning
NER	Named Entity Recognition
OCR	Optical character recognition
Protobuf	Protocol Buffers
RAI	Radiotelevisione Italiana Spa
RAISE	European Center of Excellence in Exascale Computing “Research on AI- and Simulation-Based Engineering at Exascale”
REST	Representational State Transfer
T	Task
TM	Truly Media
UC	Use case





UI	User interface
UNITN	Università degli Studi di Trento
URL	Uniform resource locator
WP	Work package





AIoD Terminology

In the context of the AI-on-Demand Platform (AIoD) and the AI4Media project, some terms are frequently used. The terms are used in a certain spelling and with a specific meaning. To make the meaning understandable to the reader, these terms are defined below. It should be noted, however, that not all persons in the AIoD environment use each of these terms with the same meaning. To that extent, the following definition is a delineation to clarify the meaning in the context of this document.

Term	Meaning
AI Asset	An entry in the AI Assets Catalog of the AIoD Community Platform consisting of a textual description in predefined metadata fields, web links and an image. An AI asset can be of type Service, Dataset, Docker container, Executable, Jupyter Notebook, Library, ML Model or Tutorial.
AI Assets Catalog¹	List of all AI Assets that have been contributed to the AIoD Community Platform.
AI component / Component	General term for a part of AI related software, data or system used throughout the DoA of AI4Media.
AI model (in AI-Builder Marketplace)	Metadata record for a Docker container that conforms to the AI4EU container specification. AI-Builder only stores references to docker images (docker image URIs), never the images directly. An AI model can also contain a dataset which is made accessible by so called data brokers. They make the data available as one of the input nodes for a pipeline. They are not uploaded to the platform. Datasets themselves are not uploaded to the platform. AI-Builder pipelines (aka composite solutions) are also published as AI models in the Marketplace.
AI model / ML model / data model	In general language usage this refers to a derivate of data produced by some technology. A model has been generated from training data that is processed by some algorithms and is used for the inference of AI/ML tasks.
AI module / Module	General term for a part of AI related software, data or system mainly used in WP8 of the Description of Action (DoA) of AI4Media.
AI resource	General term for AI related tools, data and models used in context of the AIoD and in WP7 of the DoA of AI4Media.
AI-Builder²	Technical part of the AIoD providing a marketplace for AI models and a GUI-based application for the creation of AI experiments. AI4Europe has introduced the name AI-Builder in 2023 substituting the formerly used name AI4EU Experiments (alternatively used name: AI4Experiments).
AI-Builder Design Studio	GUI-based application for the creation of AI experiments integrated in AI-Builder.

¹ <https://www.ai4europe.eu/research/ai-catalog>, last visited 27/08/2024

² <https://aiexp.ai4europe.eu/#/home>, last visited 27/08/2024





AI-Builder Marketplace	Catalog of AI models available in AI-Builder
AI-Cafe	Live web lecture.
AI-Lab Playground	Execution environment for AI models.
AI-on-Demand Platform	Abbreviation: AIoD. Alternative use: AIoD Platform.
AI4EU Experiments	Replaced name for the technical part of the AIoD: AI-Builder.
AIoD Community Platform³	System consisting of a website and a gateway to contribute to the AIoD community. AI4Europe has introduced the name AI-Builder in 2023 substituting the formerly used term AIoD website.
Composite solution	In AI-Builder this term is used for AI pipelines, stressing that a pipeline is composed of several models.
Contribution Gateway	Part of the AIoD Community Platform for the contribution of content by the AI community.
gRPC Interface	gRPC is an open source remote procedure call (RPC) framework initially created by Google. The gRPC interface allows for the seamless communication and interaction between different software systems. By default, gRPC uses Protocol Buffers.
Protobuf definitions	Protobuf definitions are structured data schemas defined using the Protocol Buffers (Protobuf) language. They specify the format and structure of data that can be serialized and transmitted between different programming languages and software systems.
Solution	In the AcuCompose Design Studio of AI-Builder, this is a category for AI pipelines.

³ <https://community.aiod.eu/> (currently redirected to <https://www.ai4europe.eu/>), last visited 27/08/2024





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1 Executive Summary

The deliverable D7.4 is the last out of three iterations (initial/extended/final version) to present the results of the tasks T7.1, T7.2, T7.3, T7.4 and T7.6 from work package 7 (WP7) of AI4Media. As the purpose of WP7 is the integration of AI4Media outcomes with the European AI-on-Demand Platform (AloD), this deliverable provides information about this integration and shows that it has been very successful.

The AloD is a community-driven channel designed to empower European research and innovation in Artificial Intelligence (AI). It aims to bring together the AI community while promoting European values, and to facilitate technology transfer from research to industry. Users can contribute AI-related knowledge, assets, services, or tools as well as make use of numerous resources available, including educational resources.

The type of this deliverable is “demonstrator”. This means that it is publicly available content that represents the results of tasks T7.1 to T7.4. In particular, it should be noted that the essence of this deliverable is not this document. The deliverable serves as an entry point/index for the related sub-deliverables, providing links pointing to these publicly available components.

Section 2 provides an introduction to the scope of work of WP7 as well as the integration of AI4Media outcomes into the AloD. A detailed description of the results of tasks T7.1 to T7.4 is given in sections 3 to 6. Section 7 documents the results of the interim platform management for the time between two EC funded projects that have been responsible for this task.

The publicly available components of this deliverable are the following:

- Content on the AloD Community Platform including assets in the AI Assets Catalog which are linked to AI4Media⁴ (see Appendix 1 in section 9)
- AI assets published to other catalogs that are part of the AloD (see Appendix 2 in section 10)
- AI-Cafes (lectures) published on the public AI-Cafe video channel⁵ as well as on the AI-Cafe YouTube channel⁶
- AI models contributed by AI4Media to the AI-Builder Marketplace (see Appendix 3 in section 11)
- AI pipelines created by AI4Media for different experiments and published in the AI-Builder Marketplace (see section 5.4)
- Showcases for the interoperability of AI-Builder with other media platforms (see section 6)

⁴ https://www.ai4europe.eu/ai-community/projects/ai4media?category=ai_assets, last visited 27/08/2024

⁵ <https://www.gotostage.com/channel/ai-cafe>, last visited 27/08/2024

⁶ <https://www.youtube.com/channel/UCWjwTdAPRKHVcj6zudV6ZXQ>, last visited 27/08/2024



- Open call challenge developed for the contribution of a new experiment to AI-Builder (see section 5.5)

These results are complemented by the results already presented in detail in the previous versions of this deliverable, i.e. D7.1 (Integration plan and initial version of the integration result with the AI-on-Demand Platform) and D7.2 (Extended version of the integration result with the AI-On-Demand Platform). Altogether, these components constitute the final version of AI4Media's integration with the AIoD.





2 Introduction

As it is stated on its own website, the European “AI-on-Demand Platform (AIoD) is a community-driven channel designed to empower European research and innovation in Artificial Intelligence (AI), while ensuring the European seal of quality, trustworthiness and explainability”⁷. The aim of this platform, which has been initiated by the AI4EU project⁸ and is currently being continued by the AI4Europe project⁹, is to bring together the AI community while promoting European values, and to facilitate technology transfer from research to industry. Being one of the Networks of Excellence of the H2020-ICT-48 programme¹⁰, AI4Media is committed to the AIoD by integrating the project’s outputs such as modules, services, algorithms, and datasets into the platform as well as by organising AI-Cafes for community building, sharing news and events. Together with the other projects of the H2020-ICT-49 programme¹¹ and 40 projects funded under the Horizon Europe programme¹², AI4Media is one of the pillars ensuring the ever-growing amount of community content available on AIoD.

2.1 About the document

This document is part of a series of deliverables that build on each other in terms of time and content:

- D7.1 - Integration plan and initial version of the integration result with the AI-on-Demand Platform¹³ (delivered in M16)
- D7.2 - Extended version of the integration result with the AI-On-Demand Platform¹⁴ (delivered in M36)
- D7.4 - Final version of the integration result with the AI-On-Demand Platform (delivered in M48)

For this reason, the content of this document builds on the previous versions. The document structure has been retained as far as possible. Contents were updated, partially summarised, and supplemented by reports on further activities and new results from the last period of the project.

⁷ <https://aiod.eu/about>, last visited 27/08/2024

⁸ For details see <https://cordis.europa.eu/project/id/825619>, last visited 27/08/2024

⁹ For details see <https://cordis.europa.eu/project/id/101070000>, last visited 27/08/2024

¹⁰ For details see https://cordis.europa.eu/programme/id/H2020_ICT-48-2020, last visited 27/08/2024

¹¹ For details see https://cordis.europa.eu/programme/id/H2020_ICT-49-2020, last visited 27/08/2024

¹² <https://aiod.eu/about>, last visited 27/08/2024

¹³ Document is available for download at <https://www.ai4media.eu/reports/integration-plan-and-initial-version-of-the-integration-result-with-the-ai-on-demand-platform-d7-1/>, last visited 27/08/2024

¹⁴ Document is available for download at <https://www.ai4media.eu/reports/extended-version-of-the-integration-result-with-the-ai-on-demand-platform-d7-2/>, last visited 27/08/2024





2.2 AI4Media's integration with the AI-on-Demand Platform

In January 2019, the AI4EU consortium was established to build the first European AIoD and ecosystem with the support of the European Commission under the H2020 programme. As more and more features are integrated, the AIoD serves as a catalyst to aid AI-based innovation, resulting in new products, services, and solutions to benefit European industry, commerce, and society. By bringing people together, the platform counterbalances the fragmentation of the European AI landscape.

Following the efforts of AI4EU, in 2022, the AI4Europe project has taken over the responsibility for operations and further development of the AIoD. This is supported by the projects within the funding H2020 initiatives ICT-48 and ICT-49 and more projects under the Horizon Europe programme. All projects are expected to integrate new assets and features in the AIoD. Within AI4Media, WP7 was established for exactly this purpose. In fact, the integration of AI4Media outcomes with the platform covers a wide spectrum of aspects, which are reflected by the different sub-tasks of this work package:

- T7.1 Publication of AI resources to the AI-on-Demand Platform
- T7.2 Community building using the AI-on-Demand Platform
- T7.3 Using and supporting the experimentation services of the AI-on-Demand Platform
- T7.4 Achieving interoperability between the AI-on-Demand Platform and media platforms
- T7.5 Platform liability vs. platform responsibility for third party content
- T7.6 Management of the European AI-on-Demand platform, development, and operation of AI4EU Experiments

The results achieved for the tasks T7.1, T7.2, T7.3, T7.4 and T7.6 are described, in this order, in the following sections of D7.4. The task T7.5 has its own deliverable (D7.3¹⁵) and is thus not discussed in this document.

The full spectrum of all possibilities for integrating project results into the various AIoD offerings is illustrated by the example of the multilingual named entity recognition (NER) by Fraunhofer. This component has been published as an AI Asset¹⁶. It was onboarded to the AI-Builder

¹⁵ Document is available for download at <https://www.ai4media.eu/reports/from-platform-liability-to-platform-responsibility-analysis-of-the-shifting-policy-approach-guidelines-for-the-ai-on-demand-platform-and-policy-recommendations-d7-3/>, last visited 27/08/2024

¹⁶ <https://www.ai4europe.eu/research/ai-catalog/entity-recognizer>, last visited 27/08/2024



Marketplace with different interfaces¹⁷ to support different pipelines¹⁸ built on AI-Builder as well as integrations into media platforms. The interoperability to use the component was proven by its integration into the Fraunhofer Mining Platform as a mining service and into the RAI Concept Book application in the context of use case 3 of WP8. Furthermore, the multilingual NER component has been presented in an AI-Cafe¹⁹ in 2022.

2.3 Acknowledgements

The core part of this deliverable are the contributions from AI4Media to the AIoD. Therefore, we would like to thank all contributors for their input and all AI4Media partners for their support.

¹⁷ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=e3794e16-0225-4bf1-a99c-b99638a22232&revisionId=f7447500-0c8d-4ca7-be7e-24ce3fed144>,
<https://aiexp.ai4europe.eu/index.html#/marketSolutions?solutionId=e3794e16-0225-4bf1-a99c-b99638a22232&revisionId=41df686d-9fa3-4104-996f-fa926332adbb>,
<https://aiexp.ai4europe.eu/index.html#/marketSolutions?solutionId=e3794e16-0225-4bf1-a99c-b99638a22232&revisionId=7220ac2a-a908-46df-a58d-bad87bbbad23>,

<https://aiexp.ai4europe.eu/index.html#/marketSolutions?solutionId=27e777bc-2968-427c-9df5-9f5593613475&revisionId=77f58af9-73d4-48b8-9237-7c6e1d3cdb97>, last visited 27/08/2024

¹⁸ ner-pipeline: <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=612a819c-66fe-4ac4-86ae-b04e95ef4624&revisionId=a63bc9db-1691-45ca-a022-98e89ff43fd5>,

AI4Media Demo: <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=a87cb119-168c-45b0-9a3e-6963396c1acf&revisionId=ca6125ff-b507-4c9a-b223-5440316a15d4>, last visited 27/08/2024

¹⁹ Recording on: <https://www.youtube.com/watch?v=MfGhPjqYBbQ>, last visited 27/08/2024





3 Publications on the AIoD Community Platform

The AIoD Community Platform is a community-driven channel that allows participating projects to publish different types of content. It consists of a contribution gateway²⁰ for the upload of content and a website²¹ for the publication of the contributed content. An essential part of the website is the AI Assets Catalog²², which allows searching all registered AI resources. A significant amount of AI resources developed within the AI4Media project are published to the AI Assets Catalog of the AIoD.

Section 3 summarises the outcomes of the activities performed in the context of Task 7.1 “Publication of AI resources to the AI-on-Demand Platform”.

3.1 Content on the AIoD Community Platform

In addition to the publication of AI assets, projects can publish news, events, educational resources, open calls, and more content types on the website. All content can be uploaded to the platform using the contribution gateway by any registered user holding an EU Login.

AI4Media contributed all AI-Cafes, other public events, both open calls, selected news, and a significant number of AIDA courses to the content repository of the AIoD. Figure 1 provides an overview of content contributed to the AIoD Community Platform by AI4Media broken down by content type.

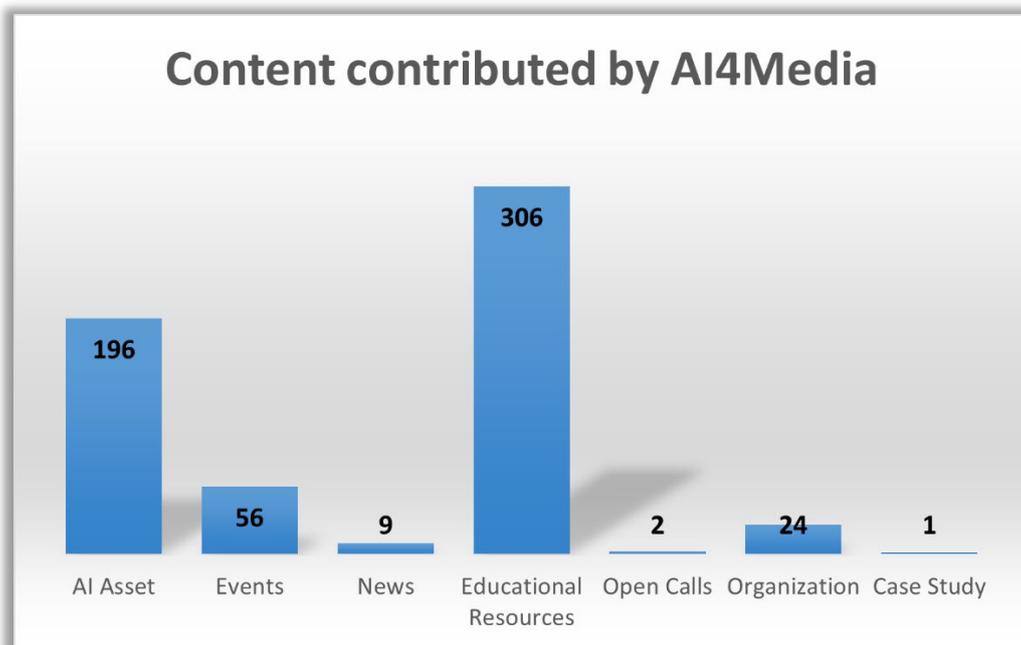


Figure 1: Content contributed by AI4Media to the AIoD Community Platform²³

²⁰ <https://www.ai4europe.eu/contribute>, last visited 27/08/2024

²¹ <https://www.ai4europe.eu/>, last visited 27/08/2024

²² <https://www.ai4europe.eu/research/ai-catalog>, last visited 27/08/2024

²³ Numbers as of 27/08/2024





3.2 AI Assets contributed by AI4Media

The AI Assets Catalog of the AloD allows the publication of a variety of types of assets. An asset can be of the type:

- AI as a service
- Dataset
- Docker container
- Executable
- Jupyter Notebook
- Library
- ML Model
- Tutorial

Each asset is published by its creator, who contributes the necessary detailed information. The quality of the assets is ensured by predefined mandatory and optional metadata fields and the moderation process established by the platform. Each asset shall contain detailed information about the respective resource including a textual description, links to relevant documents, the license, a classification regarding research area and technical category, and keywords. In addition, information can be provided about the trustworthiness of the asset and applicable GDPR requirements. Figure 4 provides an example for an AI asset.

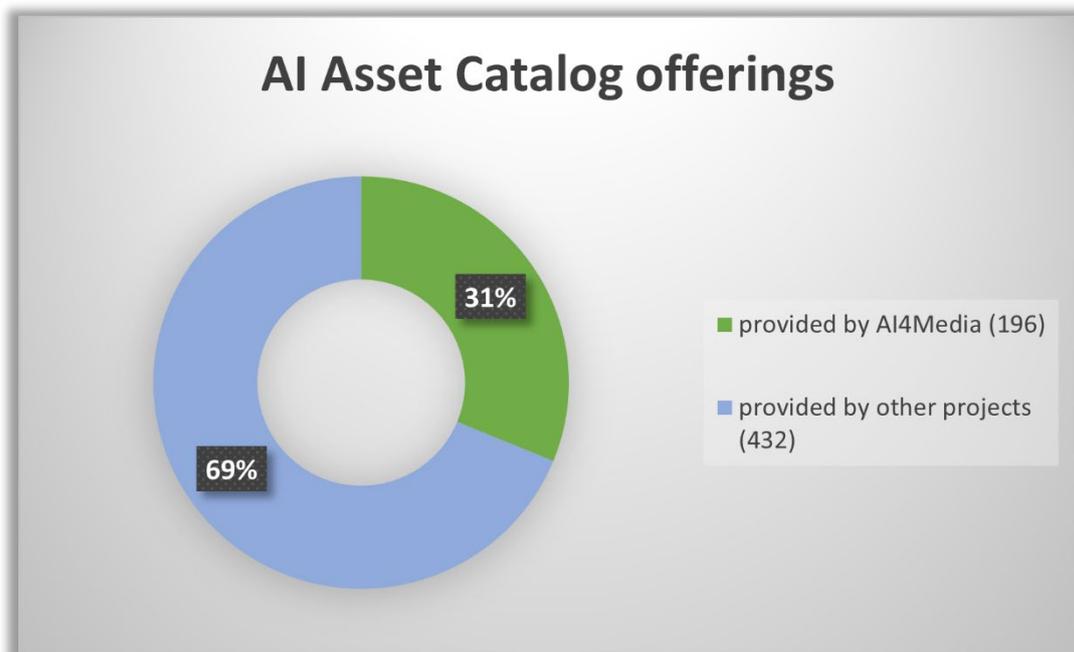


Figure 2: AI Assets in the Catalog (contributions from AI4Media compared to other contributions)²⁴

²⁴ Numbers as of 27/08/2024



At the time of creation of this deliverable, there are **196 AI assets** published in the AI Assets Catalog which are linked to AI4Media. In relation to the total number of 628 published entries, it can be seen that AI4Media has made a significant contribution to the Asset Catalog offering, contributing 31% of the total AIoD assets. Figure 3 provides an overview of these assets broken down by asset type. Section 9 “Appendix 1: List of AI assets in Assets Catalog” contains a detailed list of these assets. An overview, including any updates which meanwhile might have been applied, can also be accessed on the AI4Media project page on the AIoD Community Platform²⁵. For an up-to-date list of published AI assets please always visit the AI4Media project page online.

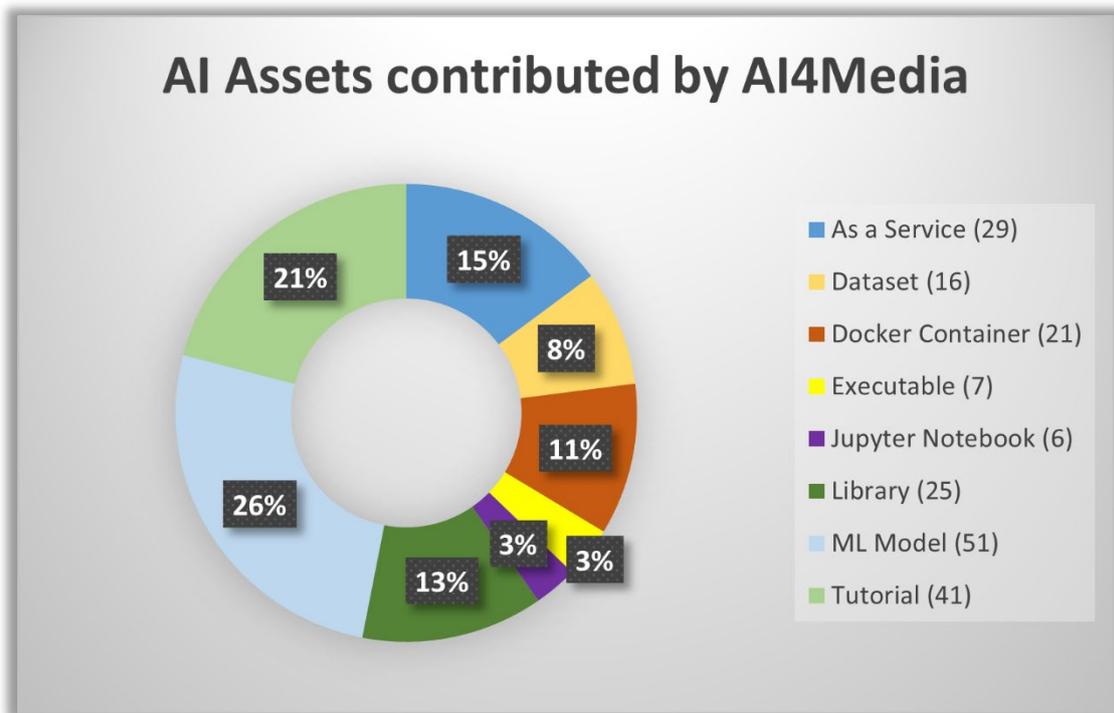


Figure 3: AI Assets contributed by AI4Media to the AIoD Assets Catalog²⁶

²⁵ https://www.ai4europe.eu/ai-community/projects/ai4media?category=ai_assets, last visited 27/08/2024

²⁶ Numbers as of 27/08/2024





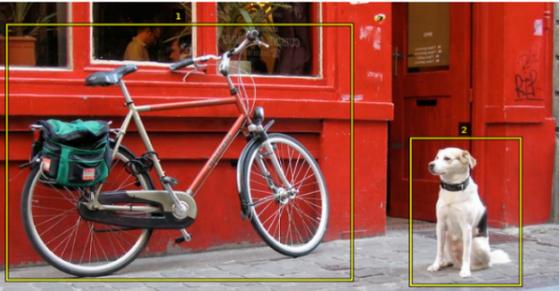
Object Detection

Detection of physical objects in still images or videos

Docker container

[Container in AI4EU Experiments](#)

[Pipeline in in AI4EU Experiments](#)



Fraunhofer, COCO image database

Developed by
Fraunhofer-Gesellschaft

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License
Other
Intellectual property of Fraunhofer IAIS (closed source)

Main Characteristic

The object detection mining service allows to detect one or more physical objects to be found in images and videos.

Input: Image file or video file. You can specify which frames are to be processed for a video.

Output: A set of detected objects will be returned for the image or each processed frame. For each detected object an axially parallel bounding box, an object category and a rating are returned. The rating indicates the certainty of the model regarding the category of the identified object within a bounding box.

In addition, an automatically generated ID is assigned to each detected object to allow the unambiguous identification of all detected objects in one media file. This ID has no relation to the category of the detected Object.

Research areas
[Physical AI](#)

Technical Categories
[Computer vision](#)

Keywords
[Computer vision](#) [object detection](#) [object identification](#) [image analysis](#) [video analysis](#)

Last updated
21.04.2023 - 14:21

Detailed Description

Model:
The mining service is using an [EfficientDet-D4-Model](#) which has been trained on the [COCO](#) dataset. The model can detect objects from 80 different categories of the COCO dataset.

Metrics:
The model is achieving a mean average precision (mAP) of 0.485 on the validation set of the COCO dataset.

Mining results details:
For the example image (see above) the object detection mining service could detect following objects:

ID; bounding box (px); category; rating
object-1; (12, 27), (401, 317); bicycle; 0.82
object-2; (467, 156), (591, 323); dog; 0.74

References:

- Mingxing Tan, Ruoming Pang, Quoc V. Le. EfficientDet: Scalable and Efficient Object Detection. Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2020, pp. 10781-10790
- Lin TY. et al. (2014). Microsoft COCO: Common Objects in Context. In: Fleet D., Pajdla T., Schiele B., Tuytelaars T. (eds) Computer Vision – ECCV 2014. ECCV 2014. Lecture Notes in Computer Science, vol 8693. Springer, Cham. https://doi.org/10.1007/978-3-319-10602-1_48

Trustworthy AI

The mining service is (1) lawful, as it respects all applicable laws and regulations (e. g. software licenses of used open source components), especially it is GDPR-compliant, (2) ethical, as it pursues the ethical goal of making information from documents easily accessible in digital form to the documents' owner, (3) robust, from a technical perspective, especially as it is deployed in a "ready-to-use" Docker container, to make processing documents as simple as possible.

GDPR Requirements

The mining service allows the user to extract textual context from images and video files. The software itself is GDPR compliant. Images and video files are processed within a Docker container and all data remains on the user's local computer. However, the user must ensure that he has the authority to store and process the file, for example if it contains personal data or other sensitive, GDPR-relevant information.

Related Projects
[AI4Media](#)

Figure 4: Example of an AI Asset contributed by AI4Media to the AIoD Assets Catalog





3.3 AI4Media contributions to other catalogs

In addition to the publication of AI assets on the AIoD, it should also be noted that AI4Media partners are regularly publishing project results such as datasets and software on other open platforms such as GitHub, Zenodo and other websites. The Resources Library²⁷ on the AI4Media website is also linking to these resources.

With recent developments on the AIoD API conducted by AI4Europe, the AIoD Assets Catalog²⁸ has integrated AI Assets published on Zenodo²⁹, Hugging Face³⁰, and OpenML³¹. Thus, all contributions from AI4Media to these catalogs should be considered as additional publications to the AI-on-Demand Platform.

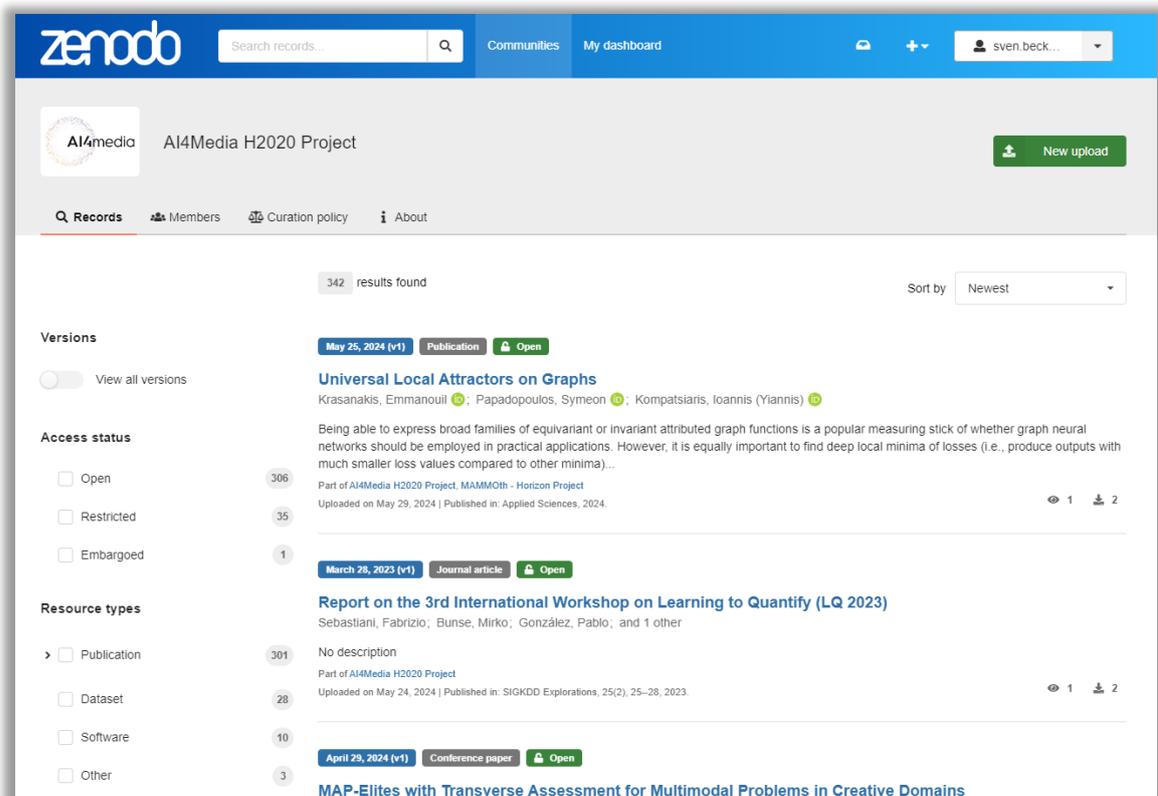


Figure 5: AI4Media publications on Zenodo

²⁷ AI4Media Resources Library: <https://www.ai4media.eu/resources-library/>,
AI4Media Open Datasets: <https://www.ai4media.eu/open-datasets/>,
AI4Media Software: <https://www.ai4media.eu/software/>, all last visited 27/08/2024

²⁸ <https://mylibrary.aiod.eu/marketplace>, last visited 27/08/2024

²⁹ <https://zenodo.org/>, last visited 27/08/2024

³⁰ <https://huggingface.co/>, last visited 27/08/2024

³¹ <https://www.openml.org/>, last visited 27/08/2024



On Zenodo contributions from AI4Media are linked to the projects space³². Among the total of 362 contributions, there are 28 datasets and 11 software assets. A comprehensive list of these contributions can be found in “Appendix 2: List of AI assets in Zenodo”.

Hugging Face and OpenML do not have a function that can trace the connection between assets and the project context in which they were created.

³² <https://zenodo.org/communities/ai4media/records>, last visited 27/08/2024



4 Web AI-Cafes

AI4Media supports the community building activities of the AI-on-Demand Platform (AIoD) by offering a series of live Web Cafes³³ on AI called **AI-Cafe**. The goal of these sessions is to gain insights into the international AI scene, to share knowledge and experiences, and to meet stakeholders from various areas of AI research and application. The AI-Cafe is coordinated by the AI4Media partner Grassroots Arts (GAR).



Figure 6: AI-Cafe banner used in mass mailing

Section 4 summarises the outcomes of the activities performed in the context of Task 7.2 “Community building using the AI-on-Demand Platform”.

4.1 Online Publication of AI-Cafes

Invitations for upcoming AI-Cafes are sent out by email to the AI-Cafe mailing list. Since 2022, a total of 565 people have subscribed to the AI-Cafe mailing list and agreed in writing to receive AI-Cafe invitations by email from GAR. To reach non-subscribers, the AI-Cafes have been also published on the AI4Media website³⁴, the AIoD³⁵ as well as on the AI-Cafe website³⁶.

³³ <https://www.ai4europe.eu/news-and-events/events/webcafes/>, last visited 27/08/2024

³⁴ <https://www.ai4media.eu/ai-cafes/>, last visited 27/08/2024

³⁵ <https://www.ai4europe.eu/news-and-events/events?category=43>, last visited 27/08/2024

³⁶ <https://ai-cafe.eu/>, last visited 27/08/2024





Figure 7: Example of AI-Cafe banner used for social media campaigns

The AI-Cafes have been also promoted in social media comprising more than 3,300 followers from Twitter, Facebook, and LinkedIn, and they have been announced through AI4Media mailing lists to more than 2,000 people comprising AI4Media partners, AI4Media associate members, AIDA members, AI4Media subscribers and subscribers of the lists of other AI projects (VISION CSA, ICT-48 NoEs, etc.).

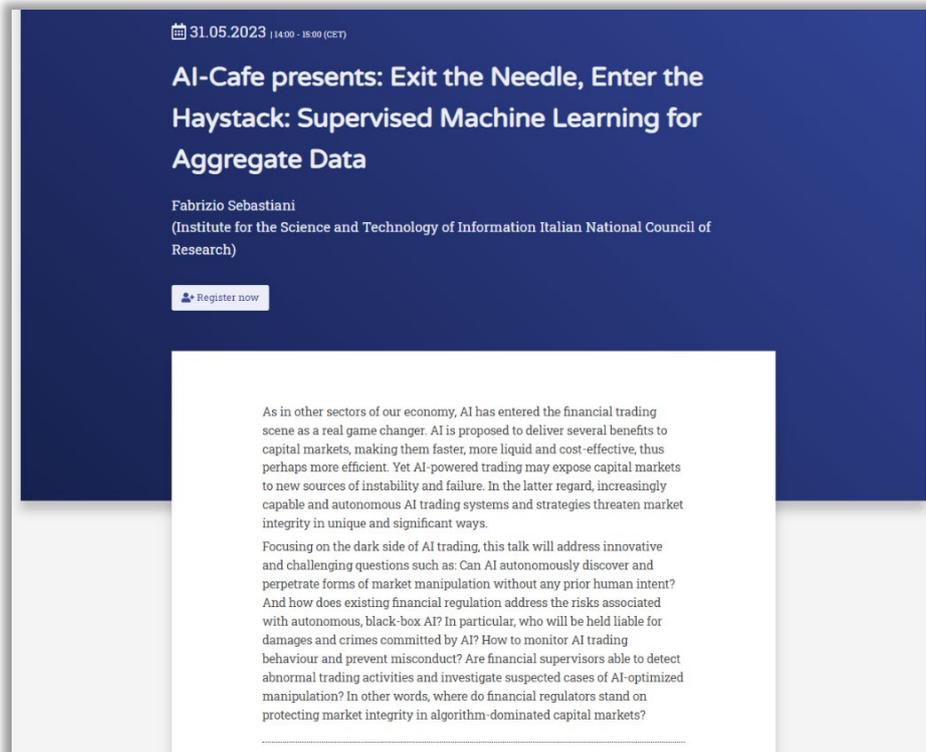


Figure 8: AI-Cafe announcement on the AIoD Community Platform





Recordings of past AI-Cafes are only available if the speaker has consented to their publication. Some speakers do not agree with their recordings being published on a video channel such as YouTube and therefore do not allow them to be published. The 111 recordings of the AI-Cafes where the speakers have given their consent can be found on the public AI-Cafe video channel³⁷ (see Figure 9) as well as on the AI-Cafe YouTube channel³⁸ (see Figure 10).

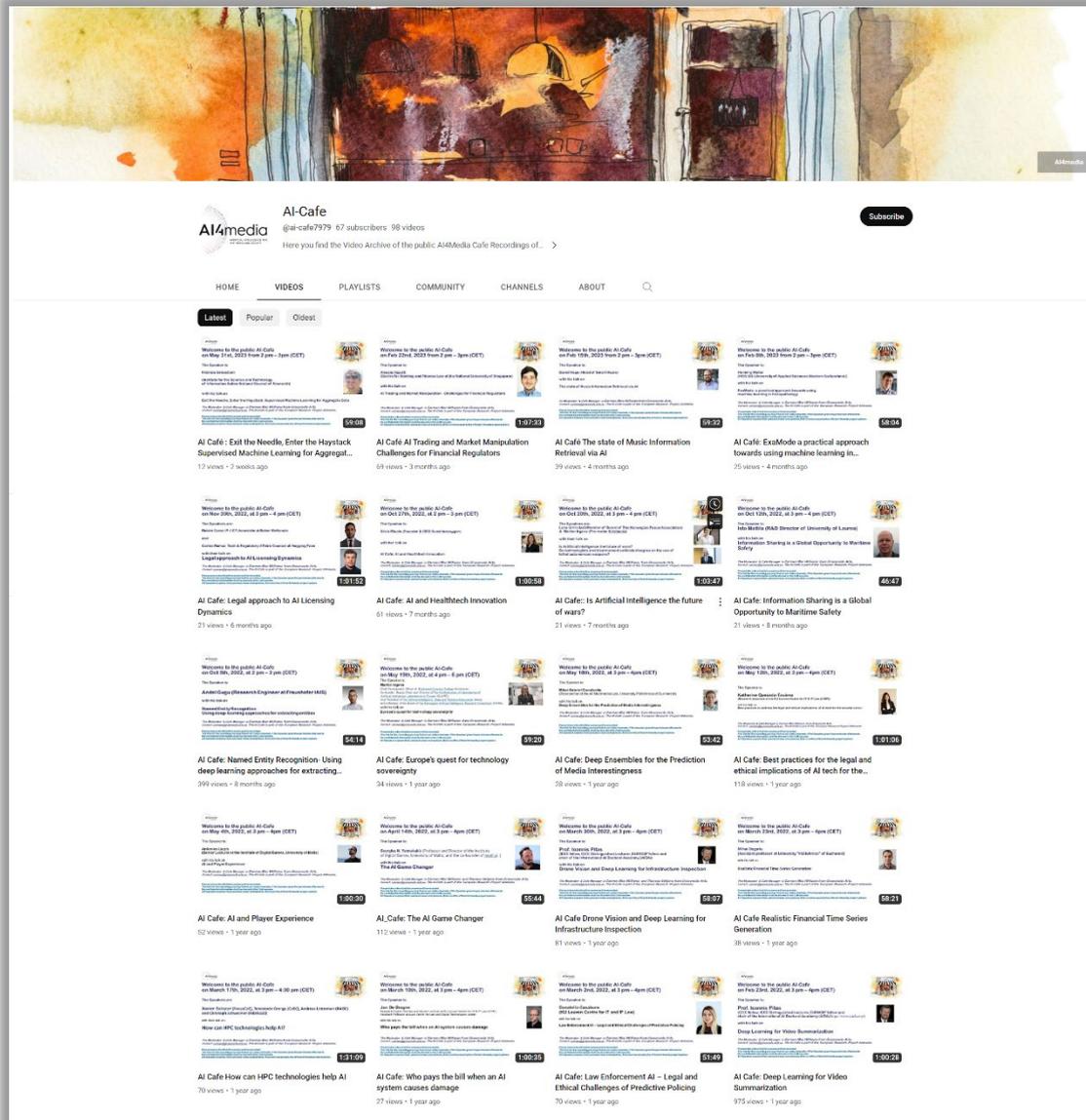


Figure 9: AI-Cafe recordings are also available on the AI-Cafe YouTube channel

³⁷ <https://www.gotostage.com/channel/ai-cafe>, last visited 27/08/2024

³⁸ <https://www.youtube.com/channel/UCWjwTdAPRKHVcj6zudV6ZXQ>, last visited 27/08/2024







Welcome to the public AI-Cafe on May 28th, 2024, at 3 pm – 4pm (CET)

The Speaker is:
AI Consultant and Researcher Bobby Bahov

with his talk

"Building Chatbots trained on Custom Data"

The Moderator & Cafe Manager is Carmen Mac Williams from Grassroots Arts, Contact: carmen@grassroots-arts.eu. The AI-Cafe is part of the European Research Project AI4media and funded by the European Commission.

Please take notice that this session will be recorded.
The link for the recording you may find on our video channels, if the Speaker gives the permission afterwards.
No confidential information shall be shared in this Café session.
All Speakers express their personal views and opinions, this is not the official AI4media project opinion.




Figure 10: Thumbnail of an AI-Cafe recording in May 2024

4.2 Overview of the previous AI-Cafes

There have been more than 115 AI-Cafes including the sessions for AI4EU Project and AI4Media. Within AI4Media, there have been 42 AI-Cafes. A target of 30 AI-Cafes had been defined as KPI5.4 for the project, so this KPI has been clearly exceeded.

In 2020/21 there have been the following 6 AI-Cafes with contributions from AI4Media members:

Number/ Date	Speaker	Affiliation	Talk Title
1 03/03/2020	Ioannis Pitas	Aristotle University of Thessaloniki	Face De-identification for privacy protection
2 02/12/2020	Yiannis Kompatsiaris	Centre for Research and Technology Hellas	A European Centre for Media, Society and Democracy
3 16/12/2020	Symeon Papadopoulos	Centre for Research and Technology Hellas	Deepfakes: An Emerging Internet Threat and their Detection
4 10/02/2021	Hannes Fassold	Joanneum Research	Employing AI for the semantic analysis of conventional and immersive video
5 17/03/2021	Roberto Iacoviello	Radiotelevisione Italiana	Video Compression turns to Artificial Intelligence



6 25/05/2021	Nicu Sebe	University of Trento	Image and Video Generation: A Deep Learning Approach
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Table 1: Web AI-Cafes with contributions from AI4Media members in 2020/21 (titles are linked to video recordings³⁹)

In 2022, there have been the following 19 AI-Cafes:

Number	Speaker	Affiliation	Talk Title
7 03/02/2022	Mark Duranton	Commissariat à l'Énergie Atomique et aux Énergies Alternatives	The Convergence of AI, Cyber-Physical Systems, the Continuum of computing: the next evolution of the Internet
8 16/02/2022	Stefan Wellsandt	Bremer Institut für Produktion und Logistik	Applying Digital Intelligent Assistants in Manufacturing
9 23/02/2022	Ioannis Pitas	Aristotle University of Thessaloniki	Deep Learning for Video Summarization
10 02/03/2022	Donatella Casaburo	KU Leuven Centre for IT & IP Law	Law Enforcement AI – Legal and Ethical Challenges of Predictive Policing
11 10/03/2022	Jan De Bruyne	KU Leuven Centre for IT & IP Law	Who Pays the Bill when AI Causes Damage?
12 17/03/2022	Temistocle Grenga, Andreas Lintermann, Xavier Salazar, Christoph Schweimer	CoEC, RAISE, FocusCoE, HiDALGO	How can HPC technologies help AI?
13 23/03/2022	Mihai Dogariu	University Politehnica of Bucharest	Realistic Financial Time Series Generation
14 30/03/2022	Ioannis Pitas	Aristotle University of Thessaloniki	Drone Vision and Deep Learning for Infrastructure Inspection
15 14/04/2022	Georgio Yannakakis	University of Malta	The AI Game Changer
16 04/05/2022	Antonios Liapis	University of Malta	Artificial Intelligence and Player Experience
17 12/05/2022	Katherine Quezada-Tavárez	KU Leuven Centre for IT & IP Law	Best practices for the legal and ethical implications of AI tech for the security sector

³⁹ All links were last visited 27/08/2024





18 18/05/2022	Mihai Gabriel Constantin	University Politehnica of Bucharest	Deep Ensembles for the Prediction of Media Interestingness
19 19/05/2022	Morten Irgens	ADRA/Claire	Europe's Dream of Tech Sovereignty
20 05/10/2022	Andel Gugu	Fraunhofer IAIS	Named Entity Recognition: Using deep-learning approaches for extracting entities
21 12/10/2022	Isto Mattila	University of Laurea	Information Sharing is a Global Opportunity for Maritime Safety
22 20/10/2022	Morten Irgens, Lene Grimstad	Kristiania University College, The Norwegian Peace Association	Is Artificial Intelligence the future of wars? Do technologists and disarmament activists disagree on the use of lethal autonomous weapons?
23 27/10/2022	Silvia Micalo	Sunshineoxygen	Artificial Intelligence and Healthtech
24 30/11/2022	Rubén Cano, Carlos Muñoz	Baker McKenzie, Hugging Face	Legal approach to AI Licensing Dynamics
25 15/12/2022	Anastasia Siapka	Katholieke Universiteit Leuven	AI and the Future of Work

Table 2: Web AI-Cafes in 2022 (titles are linked to video recordings⁴⁰, if available)

In 2023 there have been the following 10 AI-Cafes:

Number	Speaker	Affiliation	Talk Title
26 08/02/2023	Henning Müller	HES-SO Valais-Wallis	ExaMode: a practical approach towards using machine learning in histopathology
27 15/02/2023	David Hoga	Songtradr Inc.	The state of Music Information Retrieval via AI
28 22/02/2023	Alessio Azzutti	National University of Singapore, Centre for Banking and Finance Law	AI Trading and Market Manipulation - Challenges for Financial Regulators
29 31/05/2023	Fabrizio Sebastiani	Consiglio Nazionale delle Ricerche	Exit the Needle, Enter the Haystack: Supervised Machine Learning for Aggregate Data

⁴⁰ All links were last visited 27/08/2024





30 11/10/2023	Sergio Gusmeroli	Politecnico di Milano	AI, Data Spaces and Digital Product Passports, the new technological challenges for Circular Manufacturing
31 18/10/2023	Lukas Madl	Innovethic Inc.	Building Trust - The Power of Ethical AI
32 25/10/2023	Mahmoud AbdelAziz	DevisionX Inc.	The effect of No-Code/Low-Code AutoML solution on the AI Computer Vision Industry
33 03/11/2023	Farah Mehboob	Valider (insight analytics company)	Learning Between the Lines: Transfer Learning Approach for Timeseries Data
34 22/11/2023	Maurizio Montagnuolo	Radiotelevisione Italiana	AI in vision: high quality video production and content automation
35 06/12/2023	Vincent Andrearczyk	Institute of Informatics, HES-SO Valais	Generalizability, interpretability and interaction with clinicians: Some essential ingredients for developing medical imaging models

Table 3: Web AI-Cafes in 2023 (titles are linked to video recordings⁴⁰)

Finally, in 2024 there have been the following 7 AI-Cafes:

Number	Speaker	Affiliation	Talk Title
36 07/02/2024	Bobby Bahov	Freelance AI Consultant and Researcher	Image Generation using Midjourney, Dalle-3, and Adobe Firefly
37 07/05/2024	Anna Schjøtt Hansen, Noémie Krack and Lidia Dutkiewicz	University of Amsterdam (Anna) and Centre for IT and IP law (CiTiP) of KU Leuven (Noémie and Lidia)	Generative AI in Media: societal, ethical, and legal perspectives
38 28/05/2024	Bobby Bahov	Freelance AI Consultant and Researcher	Building Chatbots Trained on Custom Data
39 11/06/2024	Bernhard C. Geiger	Know-Center GmbH	The Information Bottleneck Principle for Analysis and Design of Neural Classifiers
40 09/07/2024	Ola Bonati		Pressure, hype, and research ethics: exploring the potential of generative AI in academic research





41 (part 1) 17/07/2024	Nicola Messina, Giovanni Puccetti	Consiglio Nazionale delle Ricerche	EvaLMM -- Evaluating LLMs on common sense and factuality
41 (part 2) 17/07/2024	Roberto Gallotta	University of Malta	LLMAKER - An LLM-powered Design Assistant for Video Games
42 24/07/2024	Mathias Felipe de Lima Santos	Macquarie University, Sydney	AI's Impact on Media and Democracy in the Global South

Table 4: Web AI-Cafes in 2024 (titles are linked to video recordings⁴⁰)





5 Contributions to AI-Builder

The AI-Builder Marketplace⁴¹ is a publicly accessible platform for the development, training, sharing and deployment of AI technologies. Hence, AI-Builder constitutes the technical part of the AI-on-Demand Platform (AIoD).

The platform was developed within the AI4EU project, and the first version was made publicly available in January 2020, called AI4EU Experiments. During the course of the project, and subsequently within the AI4Europe project, the platform has been further developed and enhanced with additional functionality. In 2023, on the occasion of a major release of AI4Europe developments, the name of the platform was changed from AI4EU Experiments to AI-Builder.

AI4Media's partners have contributed to AI-Builder in different ways. On the one hand, AI technologies have been technically integrated into the platform and published on the marketplace for general use. A selection of the resources published in the AI Assets Catalog is also technically integrated into AI-Builder. However, this only applies to those types of resources where technical integration makes sense, such as datasets and Docker containers, but not to assets of other asset types. On the other hand, experiments were conducted on the platform in which AI technologies were assembled into pipelines. Each experiment was conducted for a specific purpose, to demonstrate certain functions and possibilities. The pipelines have also been published so that they can be used by others.

Section 5 summarises the outcomes of the activities performed in the context of Task 7.3 “Using and supporting the experimentation services of the AI-on-demand Platform”.

5.1 Models in AI-Builder Marketplace

Resources in the marketplace are called “models”. A model consists of a few descriptive information elements, depending on the type of the model, which can be models for Docker containers or models for pipelines. Figure 11 shows an example for a model in AI-Builder.

Models for Docker containers

The AI-Builder Marketplace makes AI technologies accessible in a uniform format. Therefore, all contributed AI technologies are wrapped into Docker containers. A Docker container is a standardized package of files containing software and possibly data that can be executed by a Docker engine. A Docker container can also contain a dataset that can be used for training or inference of AI technologies.

Models for Docker containers, also referred to as single models, are composed of a description (text, image) of the AI technology included and associated artifacts like license information, link to the Docker container, a signature defining the interface of the model in Protocol Buffers (Protobuf) syntax (see Figure 12), author information and other optional documents. All artifacts of a model are provided for download.

⁴¹ <https://aiexp.ai4europe.eu/#/marketPlace>, last visited 27/08/2024





Single models can be roughly divided into three different subtypes: (1) AI models that contain some kind of software for training or inference of AI tasks, (2) connector models that enable data input/output handling or user interfaces for human interaction with pipelines, and (3) dataset/databroker models that provide access to internal or remotely stored datasets. Section 11 “ Appendix 3: Single models in AI-Builder Marketplace” provides an overview of the models in AI-Builder that can be considered as useful for experiments in AI4Media. The above classification serves to facilitate the reader's assignment of the different models.

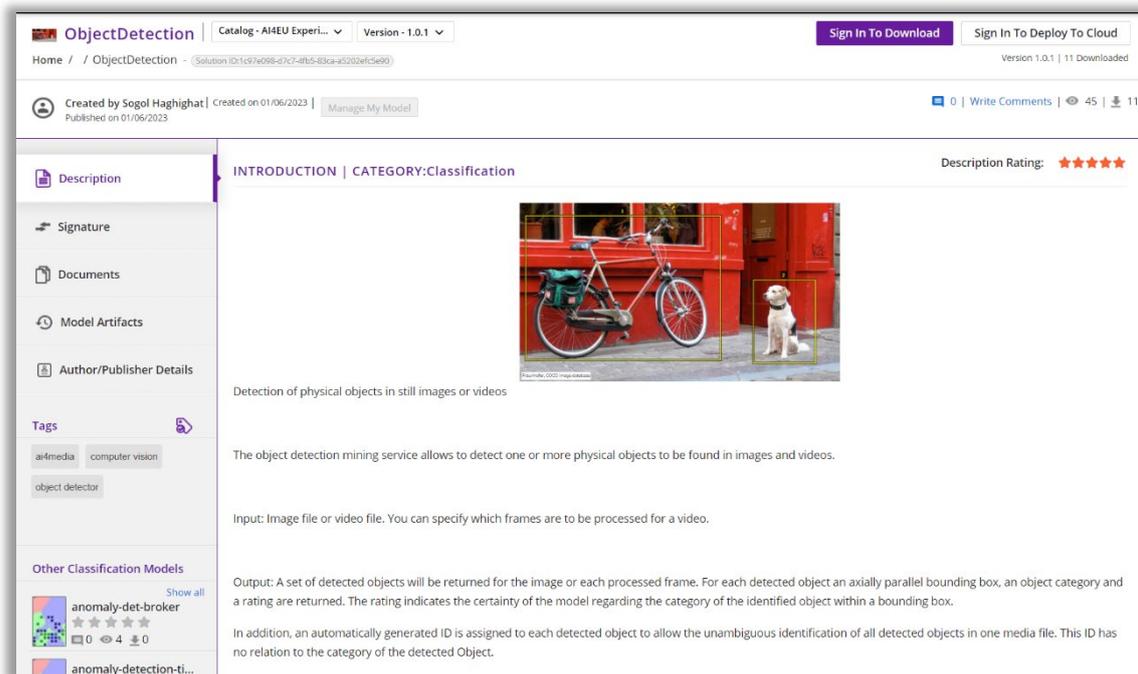


Figure 11: Description of a model in the AI-Builder Marketplace



Figure 12: Protobuf signature of a model in the AI-Builder Marketplace

It should be mentioned that the actual Docker container is not stored in the AI-Builder. The marketplace only provides metadata and access information for these containers. The Docker containers themselves can be either publicly accessible or protected. The decision not to host any data or software in the marketplace itself, but only to offer links to external resources, was made consciously when designing the platform. This enables both freely accessible and commercially offered data and solutions to be managed equally in the marketplace without having to worry about access or intellectual property protection.





Models for pipelines

Multiple models can be joined together to build AI pipelines. Therefore, the AI-Builder platform provides the Design Studio application, which is an interactive application that runs in the web browser. The Design Studio verifies the connectivity of models according to the provided Protobuf signatures. In this way, every user can compose AI pipelines and save and edit them in a personal workspace in the Design Studio application (see Figure 13). Completed pipelines can be deployed for execution, either to a local execution environment or to the AI-Lab Playground.

Models for pipelines, also known as composite solutions, can also be published in the marketplace. An example for such a model is shown in Figure 14. Published models for pipelines are composed of a description (text, image) of the pipeline and associated artifacts like license information, author information and other optional documents. In addition, 2 text files in JSON syntax are provided, which carry all the information about the composition of the required models and their connections using the Protobuf interfaces of the models (see Figure 15).

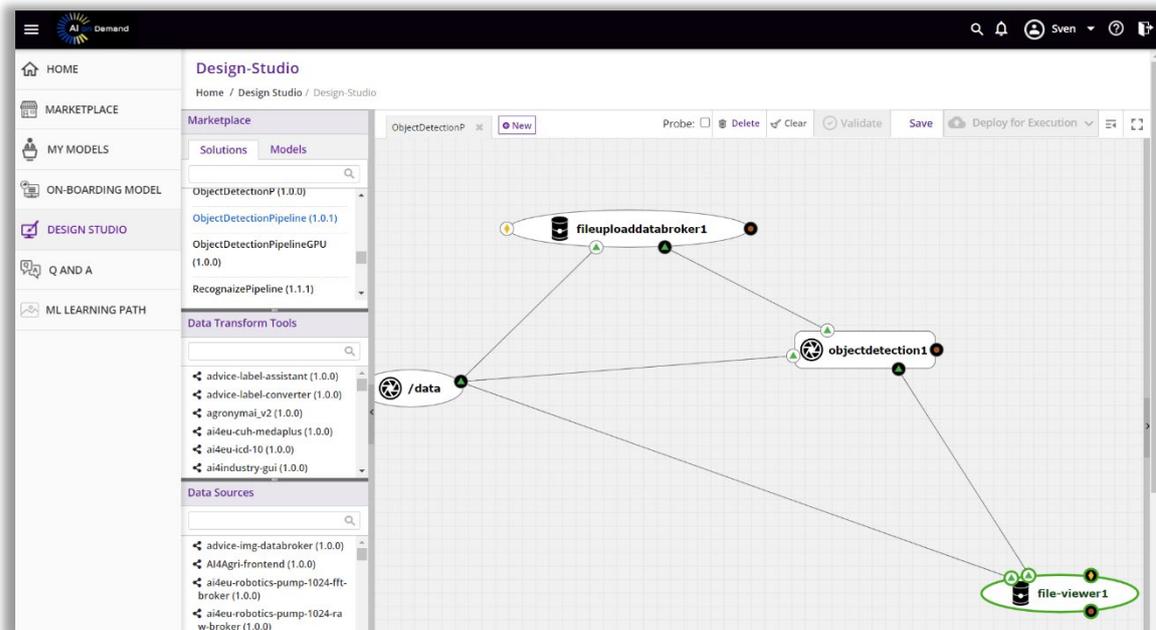


Figure 13: Pipeline model in AI-Builder Design Studio



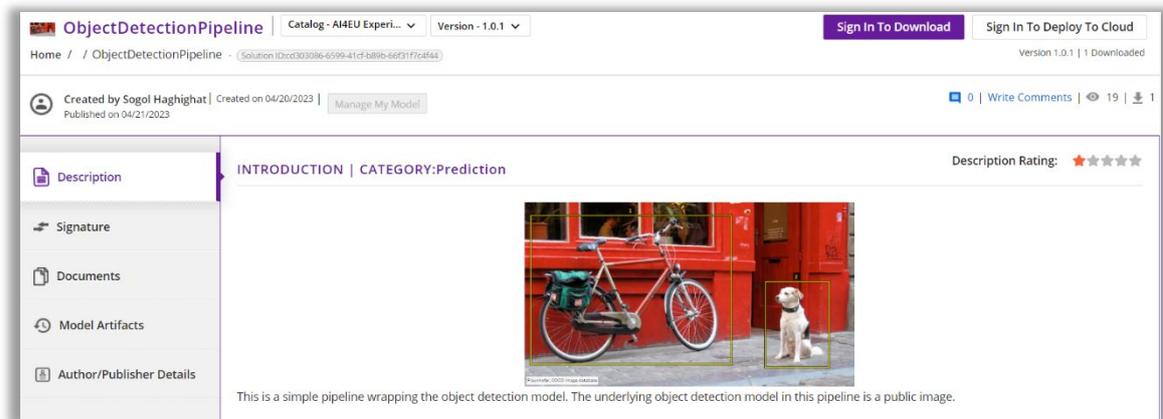


Figure 14: Pipeline model in AI-Builder Marketplace



Figure 15: Artifacts of a pipeline model in AI-Builder Marketplace

Statistics about AI-Builder Marketplace

The AI-Builder Marketplace is available to the public since late 2021. Initial model contributions have been provided by partners of the AI4EU project. After the end of AI4EU, additional models have been provided by partners of ICT-48 and ICT-49 projects as well as the AI4Europe project. In 2022, 39 models were launched, 10 of which came from AI4Media. Since 2023, there has been significant growth in the marketplace, in particular by the results of the ICT-49 projects. AI4Media contributed a total of 51 models (35 single models, 16 composite solutions). At the time of preparation of this deliverable the marketplace included a total of 400 models⁴², 71 of which were composite solutions.

5.2 Conducting experiments on the AI-Builder platform

Conducting experiments on the AI-Builder platform requires adherence to certain technical preconditions as well as onboarding models to the marketplace and designing pipelines with Design Studio.

As a result of the AI4EU and AI4Europe projects, some manuals and tutorials are available:

- YouTube Playlist⁴³ with tutorials and presentations

⁴² Numbers as of 27/08/2024

⁴³ <https://www.youtube.com/playlist?list=PLL80pOdPsmF6s6P6i2vZNoJ2G0ccwTPa>, last visited 27/08/2024



- Source Code Tutorials⁴⁴
- Docker container specification⁴⁵

Deliverable 7.2 of AI4Media also contains a detailed technical tutorial for the construction of a pipeline in section 11 (Appendix 3). Using ObjectDetection as an example, it explains the required provision of the AI technology as a Docker container, the definition of suitable model interfaces (Protobuf Definition), the onboarding of the model to AI-Builder Marketplace, the design of a pipeline in Design Studio and the deployment of the pipeline to either a local execution environment or the deployment to AI-Lab Playground.

5.3 Single Models published in AI-Builder Marketplace

A total of 35 single models published in the AI-Builder Marketplace have been provided by AI4Media⁴⁶. Table 5 provides an overview of these models. Section 11 provides a detailed list of these models.

Type of model	Number of models
AI model	28
Connector model	5
Dataset/databroker model	2

Table 5: Number of single models in AI-Builder Marketplace contributed by AI4Media broken down by model type

5.4 AI Pipelines created in the AI4Media project

As presented in detail in deliverable D7.1⁴⁷ earlier in the project, the provision of the first publicly accessible demonstrator proved the technical feasibility of creating AI demo systems built with AI-Builder.

Since then, additional pipelines have been developed by AI4Media, each designed to demonstrate different aspects of the capabilities of AI-Builder and the Design Studio. Different types of media were also considered, and pipelines were developed to process images, video, audio, and text inputs. Table 6 gives an overview of the experiments conducted and pipelines published so far by AI4Media:

⁴⁴ <https://github.com/ai4eu/tutorials>, last visited 27/08/2024

⁴⁵ https://github.com/ai4eu/tutorials/tree/master/Container_Specification, last visited 27/08/2024

⁴⁶ Numbers as of 27/08/2024

⁴⁷ Document is available for download at <https://www.ai4media.eu/reports/integration-plan-and-initial-version-of-the-integration-result-with-the-ai-on-demand-platform-d7-1/>, last visited 27/08/2024





Pipelines	Text	Audio	Image	Video
ActionRecognitionPipeline				X
AI4Media Demo	X	X		
audio-pipeline		X		
MindBugs Discovery hybrid AI application pipeline (text-analyze)	X			
MusicDetection-pipeline		X		
MusicDetectionPL		X		
ner-pipeline	X			
news-training-pipeline	X			
ObjectDetectionP (protected solution)			X	X
ObjectDetectionPipeline			X	X
ObjectDetectionPipelineGPU			X	X
RecognaizePipeline	X		X	
sentiment-analysis-pipeline	X			
ShotDetectionPipeline				X
VideoShotDetectionPipelineGPU				X
VisualFeatureExtractionPipeline			X	X

Table 6: AI4Media pipelines in AI-Builder by media type (titles are linked to models in marketplace⁴⁸)

The different aspects of the use of the platform and the requirements set with the experiments are explained in detail in the following.

5.4.1 Reusable input and output interfaces

Many experiments follow the same scheme of data flow. Data is passed to an AI model in the form of a file for analysis. The model stores the data in a file system, analyzes it and generates an output, often also in the form of a file. Thus, for interactive experiments, each AI model must be augmented with models for data input, storage, and output in a pipeline. To avoid that every user must develop his own implementation for data input, storage, and output, suitable connector models have been developed and published in the marketplace for general use:

- [FileUploadDataBroker](#)⁴⁹: This simple file upload data broker can be used as a starting point for pipelines which process files. It offers a web interface with a simple file upload dialog. The uploaded files are saved on a shared volume, then the corresponding paths are sent to the next model in the pipeline. This model is in use in 9 of the pipelines in Table 6 above.
- [SharedFolderProvider](#)⁵⁰: The shared folder provider is a virtual node that is representing Kubernetes persistent volume. It provides a file system that can be mounted by the

⁴⁸ All links were last visited 27/08/2024

⁴⁹ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=1681c927-ae2c-41f6-9ee4-51ece5e80806&revisionId=f5f3b0cc-2486-45ac-8928-8769b89c8825>, last visited 27/08/2024

⁵⁰ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=152894f9-853e-45fc-8879-7bfc852c7a7&revisionId=4a6eea59-f40b-453b-a1d6-e1677bcb42b0>, last visited 27/08/2024





containers of a pipeline to store and access data at runtime. This model is in use in 11 of the pipelines in Table 6 above.

- file-viewer⁵¹: The model offers a web interface to show a list of files of a dedicated shared folder and links to download the files. This model is in use in 8 of the pipelines in Table 6 above.

5.4.2 Reproducibility of experiments

This experiment serves to prove that the construction of identical pipelines by different people is possible. Two people independently used the same models to construct and then deploy a simple pipeline using Design Studio in AI-Builder. As a result of this successfully conducted experiment, both pipelines are published in the AI-Builder Marketplace:

- MusicDetectionPL⁵²
- MusicDetection-pipeline⁵³

5.4.3 Examples of publicly accessible model containers for deployment in AI-Lab Playground

In addition to the projects funded by the European Commission, the KI.NRW competence platform⁵⁴ has contributed the AI-Lab Playground as a new subsystem to the AIoD. The AI-Lab Playground offers an execution environment for Docker containers designed for a very simple deployment of pipelines created in AI-Builder. It allows experimenting with AI technologies without the need to have experience with the technical deployment of Docker containers.

The AI-Lab Playground provides a web-based user interface for conducting experiments using AI technology. So far, deployments in the AI-Lab Playground require that all used Docker containers are publicly accessible. The following experiments were conducted by AI4Media to demonstrate the interaction of AI-Builder and AI-Lab Playground and show the added value of the very easy Deployment of pipeline into an execution environment by clicking only one button (see Figure 16):

- ActionRecognitionPipeline⁵⁵

⁵¹ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=bb1c9198-b230-4cd5-bda5-866c689fc1b4&revisionId=811faf16-86aa-41a0-8720-4e4dcc352074>, last visited 27/08/2024

⁵² <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=eea265e1-f1b8-4f5d-8694-299b37fc3d0d&revisionId=a44f39bb-56b2-4d5e-b72c-f36cd24a9992>, last visited 27/08/2024

⁵³ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=0fc0b6dc-46e5-468b-9adf-841d9b062e51&revisionId=1b067b23-4730-4dc1-95aa-0bfc78b0a6ce>, last visited 27/08/2024

⁵⁴ <https://www.ki.nrw/en/>, last visited 27/08/2024

⁵⁵ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=9fc0cc81-8f83-4f2b-a67a-7598181d7866&revisionId=9eef18ca-37c3-4449-a634-b305379e7483>, last visited 27/08/2024



- MindBugs Discovery hybrid AI application pipeline⁵⁶
- ner-pipeline⁵⁷
- news-training-pipeline⁵⁸
- ObjectDetectionPipeline⁵⁹
- RecognizePipeline⁶⁰
- sentiment-analysis-pipeline⁶¹
- ShotDetectionPipeline⁶²
- VisualFeatureExtractionPipeline⁶³

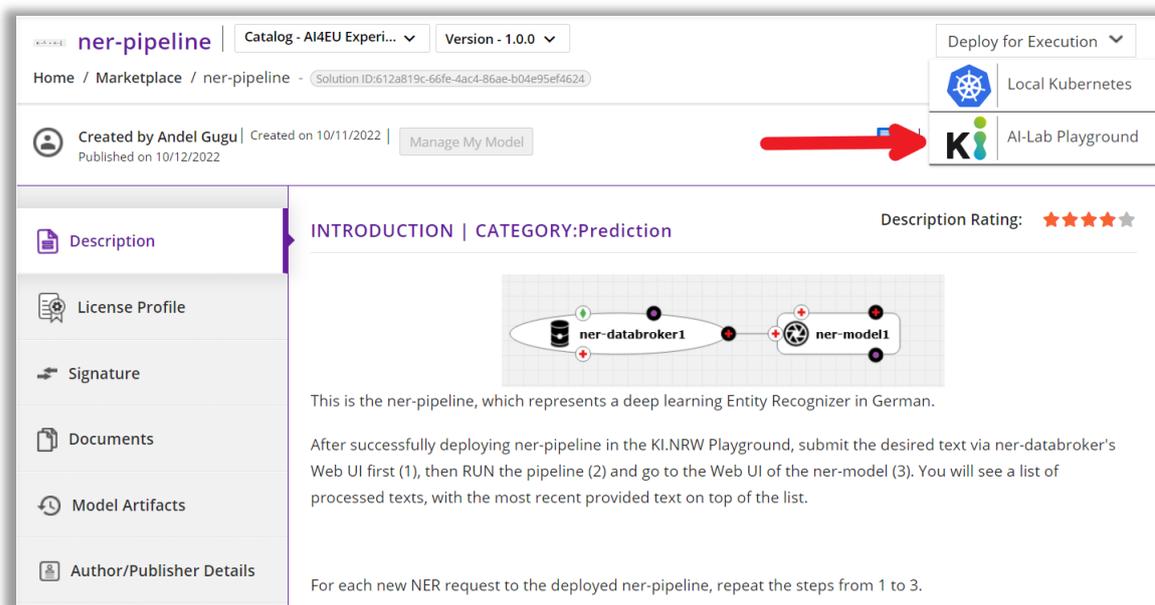


Figure 16: Deployment of a pipeline model to AI-Lab Playground in AI-Builder Marketplace

⁵⁶ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=83715cec-a32b-4abb-bbb2-a579e6eedaa0&revisionId=a80a828f-0ecd-4ea0-be21-8300ae6c920b>, last visited 27/08/2024

⁵⁷ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=612a819c-66fe-4ac4-86ae-b04e95ef4624&revisionId=a63bc9db-1691-45ca-a022-98e89ff43fd5>, last visited 27/08/2024

⁵⁸ Unfortunately, this pipeline is no longer available in the marketplace.

⁵⁹ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=cd303086-6599-41cf-b89b-66f31f7c4f44&revisionId=0d4d73db-e069-447f-949f-2eb1bc9e98e5>, last visited 27/08/2024

⁶⁰ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=fca70f4f-d6b7-4fed-a98a-8800b7831ef8&revisionId=c7b3cfaf-7960-472b-91e3-03b930dca96a>, last visited 27/08/2024

⁶¹ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=24269432-3dcf-42a8-a04e-463ed0c59757&revisionId=a951dffc-98f8-4914-a1d5-0fa79cb76640>, last visited 27/08/2024

⁶² <https://aiexp.ai4europe.eu/index.html#/marketSolutions?solutionId=75ed9075-a7fe-439f-a058-9da289f61c1c&revisionId=d802ad09-ea8c-4f94-b1d4-dfb2917f2316>, last visited 27/08/2024

⁶³ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=d074784d-2911-4ab1-abee-f4e4548df02f&revisionId=77800147-37d4-42b5-8187-25a7830bab15>, last visited 27/08/2024





5.4.4 Provision of models with different interfaces for different use cases

Depending on the particular use case, there may be different requirements for the interface of an AI model. This was demonstrated in experiments using the multilingual NER as an example. AI-Builder allows to onboard the AI component as different models as well as to create different versions for a model. Both approaches have been used for the experiments.

The following models and versions have been created by AI4Media to support different interfaces:

- ner-model⁶⁴: The input interface supports the submission of plain text. The output interface provides the processed text with detected entity types and confidence values inline. This model is used in the experiment of ner-pipeline⁵⁷ (see Figure 17).
- EntityRecognizer 1.0.0⁶⁵: The input interface supports a text stream that is created by SpeechRecognition⁶⁶ model for live speech-to-text transformation. The output interface provides a list of detected entities with their respective confidence values.
- EntityRecognizer 1.0.1⁶⁷: The input interface a text stream like version 1.0.0. The output interface provides the processed text with detected entity types inline. This model is used in the experiment of AI4Media Demo⁶⁸ (see Figure 18).
- EntityRecognizer 1.0.2⁶⁹: The input interface supports the submission of plain text. The output interface provides a list of detected entities with their entity types, respective confidence values and text position. This model is used in the experiment of RAI Concept Book system in the UC3 demonstrator (see Figure 19).

⁶⁴ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=27e777bc-2968-427c-9df5-9f5593613475&revisionId=77f58af9-73d4-48b8-9237-7c6e1d3cdb97>, last visited 27/08/2024

⁶⁵ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=e3794e16-0225-4bf1-a99c-b99638a22232&revisionId=f7447500-0c8d-4ca7-be7e-24ce3fe144>, last visited 27/08/2024

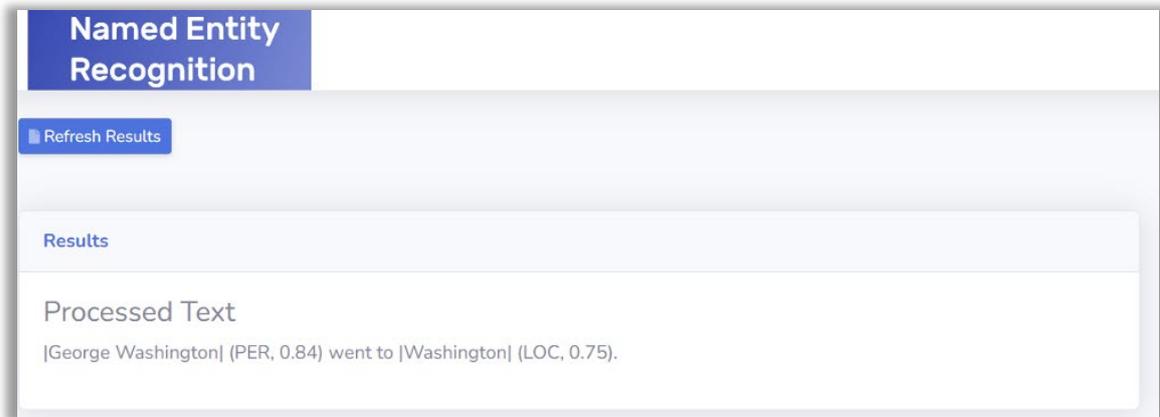
⁶⁶ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=65f43abe-ea13-45d1-9078-ce7fbbcb0d07&revisionId=3057c3ee-99e6-42f8-b398-05290d643917>, last visited 27/08/2024

⁶⁷ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=e3794e16-0225-4bf1-a99c-b99638a22232&revisionId=41df686d-9fa3-4104-996f-fa926332adbb>, last visited 27/08/2024

⁶⁸ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=a87cb119-168c-45b0-9a3e-6963396c1acf&revisionId=ca6125ff-b507-4c9a-b223-5440316a15d4>, last visited 27/08/2024

⁶⁹ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=e3794e16-0225-4bf1-a99c-b99638a22232&revisionId=7220ac2a-a908-46df-a58d-bad87bbbad23>, last visited 27/08/2024



Named Entity Recognition

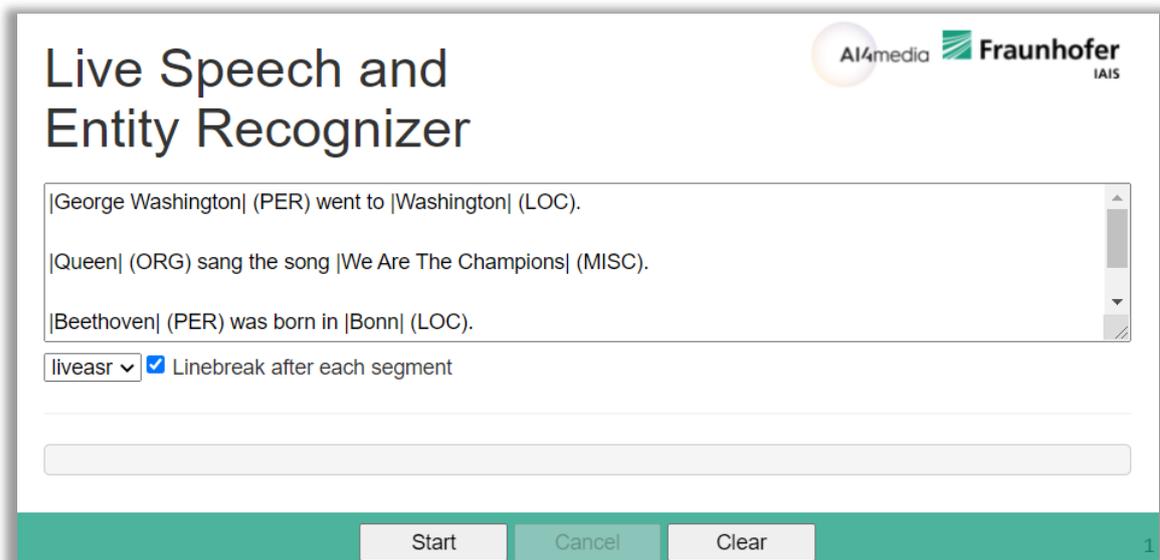
Refresh Results

Results

Processed Text

|George Washington| (PER, 0.84) went to |Washington| (LOC, 0.75).

Figure 17: User interface of ner-pipeline presenting the result of ner-model output



Live Speech and Entity Recognizer

AI4media Fraunhofer IAIS

|George Washington| (PER) went to |Washington| (LOC).
|Queen| (ORG) sang the song |We Are The Champions| (MISC).
|Beethoven| (PER) was born in |Bonn| (LOC).

liveasr Linebreak after each segment

Start Cancel Clear

Figure 18: User interface of AI4Media Demonstrator using the result of EntityRecognizer 1.0.1 model output





ObjectDetectionP⁷² that is using the same technology provided by the model with the restricted accessible Docker container of model ObjectDetection 1.0.1⁷³.

5.4.6 GPU-enabled models and pipelines

The use of GPUs for the training of or inference using AI models is particularly attractive when processing using conventional CPUs takes a considerable amount of time. This is particularly true in the area of image and video processing. With the broad public interest in generative AI since around early 2023, the availability of GPU computing resources in company-owned and cloud infrastructures appears to have increased significantly. This makes the creation of GPU-supported experiments using AI-Builder particularly interesting.

To take advantage of GPU resources in AI-Builder pipelines, the docker containers of the relevant models must be modified for GPU use, typically by selecting an appropriate base image and application-specific image optimisation. There are no specific requirements on the part of AI-Builder for the configuration of the Docker containers regarding GPU utilization, so the usual instructions for the respective target infrastructure can be consulted. Unfortunately, the AI-Lab Playground does not yet provide GPUs. Therefore, for the deployment of GPU-supported pipelines, the pipeline must be downloaded using the deployment option “Local Kubernetes”.

To demonstrate the possibilities of creating AI-Builder pipelines for GPU-supported deployment, some pipelines developed by AI4Media were modified and published accordingly. All pipelines were tested on a Kubernetes cluster with GPU nodes owned by Fraunhofer. These pipelines should serve as illustrative examples for other users of AI-Builder.

These are the GPU-based pipelines provided by AI4Media:

- ActionRecognitionPipeline⁷⁴
- ObjectDetectionPipelineGPU⁷⁵
- VideoShotDetectionPipelineGPU⁷⁶
- VisualFeatureExtractionPipeline⁷⁷

⁷² <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=b08401ec-f24a-452b-bf42-c57cb91b21e8&revisionId=490b5ed8-b498-4ddb-a99b-0cb1662f533c>, last visited 27/08/2024

⁷³ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=1c97e098-d7c7-4fb5-83ca-a5202efc5e90&revisionId=6efaddee-cb74-4995-a8c3-9bc8e3f9c29b>, last visited 27/08/2024

⁷⁴ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=9fc0cc81-8f83-4f2b-a67a-7598181d7866&revisionId=9eef18ca-37c3-4449-a634-b305379e7483>, last visited 27/08/2024

⁷⁵ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=83df993b-7b09-49be-9617-1a5e864d502c&revisionId=f9675484-d075-4678-9702-6f3aeae2a2ea>, last visited 27/08/2024

⁷⁶ <https://aiexp.ai4europe.eu/index.html#/marketSolutions?solutionId=9b05bcb4-e321-4784-952c-384d400282d2&revisionId=31fa63d4-3755-47b8-90de-82dc56b9a8ef>, last visited 27/08/2024

⁷⁷ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=d074784d-2911-4ab1-abee-f4e4548df02f&revisionId=77800147-37d4-42b5-8187-25a7830bab15>, last visited 27/08/2024





5.5 Open Call funded project for the contribution to AI-Builder

AI4Media, within the scope of WP10, has been implementing two Open Calls for the funding of 20 projects to engage AI-driven third parties to be part of the AI4Media programme. The Open Calls are structured around challenges that have been designed to provide value to the AI4Media ecosystem and contribute to the richness of the AIoD. These challenges complement or expand on research being addressed in the project or are aligned with a selection of the project's use cases.

WP7 provided the challenge “Realising a hybrid AI application in AI4EU Experiments” for Open Call #2. The challenge consisted in the realisation of a hybrid AI application on AI-Builder. More concretely, the requirements were as follows:

- The main outcome must be a working pipeline on AI-Builder.
- This pipeline must combine machine learning modules with modules for symbolic reasoning.
- The pipeline and the modules therein must be provided under an open-source licence.
- It must be possible to run the pipeline in the AI-Lab Playground.
- The pipeline must offer a web UI which allows basic handling and progress tracking, depending on the implemented functionality.
- The functionality provided by the pipeline must be suitable for the media sector.

The project funded under this challenge is titled “MindBugs Discovery” (MBD)⁷⁸ and it is implemented by Tech Wave Development Srl from Romania⁷⁹ (see also relevant detailed description in deliverable D10.3⁸⁰). MBD aims to create a deeper understanding of the structure and key elements of fake news. The information discovered will be integrated in a visual and interactive way into their mobile augmented reality application. The MindBugs team began creating and merging fake news databases in order to produce a high-quality, high-value dataset of fake news representatives for the East European region.

As a result of the open call funded project, MBD has developed and published an AI-Builder pipeline⁸¹ consisting of three models. The pipeline can be deployed to AI-Lab Playground and experiments can be conducted on the knowledge graph database provided by the project.

⁷⁸ MindBugs Discovery homepage: <https://discovery.mindbugs.ro/>, last visited 27/08/2024

⁷⁹ MindBugs Discovery Open Call #2 project: <https://www.ai4media.eu/winners2/mbd/>, last visited 27/08/2024

⁸⁰ Document is available for download at: <https://www.ai4media.eu/reports/analytics-on-submitted-proposals-d10-3/>, last visited 27/08/2024

⁸¹ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=83715cec-a32b-4abb-bbb2-a579e6eedaa0&revisionId=a80a828f-0ecd-4ea0-be21-8300aefc920b>, last visited 27/08/2024



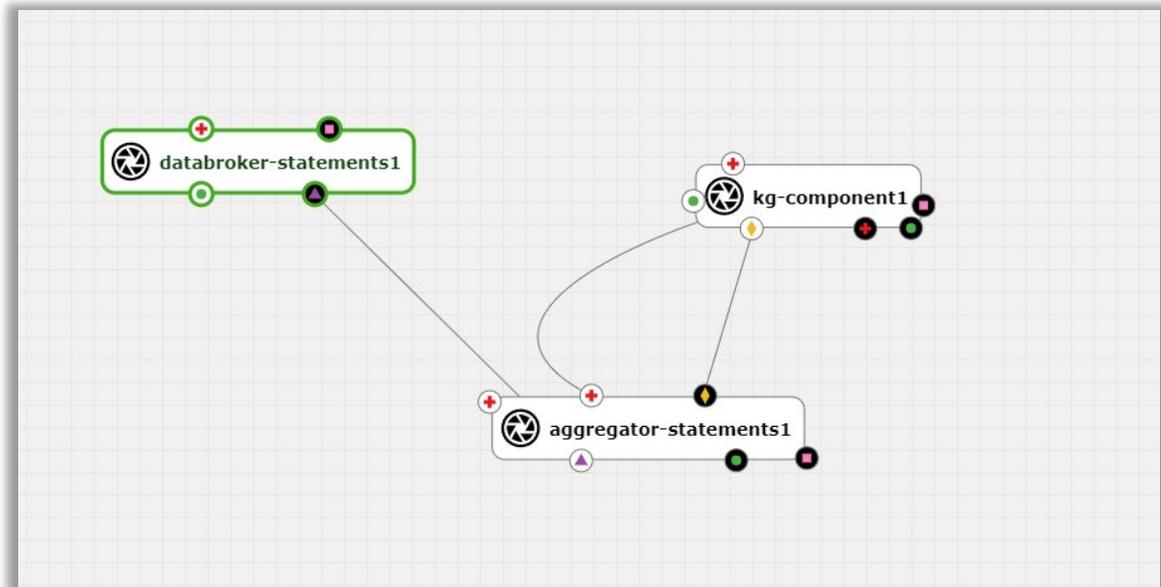


Figure 20: MindBugs Discovery hybrid AI application pipeline “text-analyze” consisting of three models

The pipeline begins with a DataBroker⁸², responsible for collecting structured data containing "statement" and "label" information. This dataset then moves to the Aggregator component, which plays a role in processing the data.

The Aggregator⁸³ serves a dual purpose. It not only trains a classifier but also extracts relevant keywords from a variety of statements, making the data more informative.

The next player in this sequence is the knowledge graph (KG) component⁸⁴. Leveraging the Aggregator's expertise, the KG component analyses and classifies statements. It also searches its disinformation graph to find the closest match to the analysed statement. The KG component identifies and highlights the disinformation community associated with the analysed statement. This step provides valuable insights into the relationships and associations within the disinformation landscape.

Further details of the functionality of the components are published on GitHub⁸⁵.

⁸² <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=94d3929b-7127-40e9-a7d9-d45b58bb8b97&revisionId=291154ec-0e62-4927-bbcd-2452c5cae550>, last visited 27/08/2024

⁸³ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=4e0e9dfd-3331-4eba-b6be-2f7df0e14566&revisionId=7fb49b25-6610-42df-8b32-6aeda75d96d9>, last visited 27/08/2024

⁸⁴ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=44b5c71a-f473-4f93-a7ae-279905fcf1bf&revisionId=4084f981-3375-4b86-910f-0a1e83ce9bfc>, last visited 27/08/2024

⁸⁵ <https://github.com/cheresioana/ai4media>, last visited 27/08/2024





Analysis Results

Label: fake_news

GPE: Romania, Russia

ORG: EU

Statements:

- The EU wants to push Moldova to a confrontation with Russia
- The West and Romania will enter the war on Ukraine
- Moldova is pushed to war with Russia and the Union with Romania
- Romania is preparing to enter the war
- Ukraine and the US have tried to attract Romania to war with Russia

Community

Community ID: 7

Community Keywords: EU || Spain threatening to exit from the EU || Transnistria || Nagorno Karabakh || scenario || Chisinau promotes antirusa hysteria || NATO || Chisinau wants in NATO || Russia || The West uses Moldova against Russia || territory || Moldova || security || West || cheap work || schools || Maia Sandu || fate || CSI || Chisinau || economy || blessing || 200 || young people || the Republic of Moldova || the Ukraine war || order || Republic || Chisinau Airport || CSI Distance || Attack || consequence || bridgehead || state language || path || anti-Russian || CPE || confrontation || artificial destabilization || briefing || political polarization || CIS || West indication || Chisinau || aggression || Romanism || form || poverty || The Republic of Moldova || one million || The Republic || antirusa hysteria || USA || Western diplomats || entry || Watchdog.md || conflict || Russophobia || terrorist actions || troops || border || opposition || future war theater || The Romanian Orthodox Church || parishes || territories || annexation || approach || Brussels || turn || marriages || accession || annex || exchange || defense || Kiev an exchange of territories || military deposits || ammunition || Danube || militarized authoritarian regime || price || `` foundation stone || Western cartoons || cartoons || Western films || languages || fire termination agreement || The armament || teaching || universities || deep crisis || candidate || status || FBI || military confrontations || The Government || neutrality || military forces || foreign interests || state security || Western structures || disorder || the Russian Federation || situation || anyone || new step || The common meeting || governments || unionist ambassador || Transnistrian || Transnistrian conflict || ex-Soviet || The weapon || armed forces || anything || States || Igor Dodon || bribes || Western non -governmental organizations || expulsion || `` elections `` observers || The Association Agreement || collaboration || genocide donbass || new gas delivery contract || withdrawal || Transnistria war || gas crisis || regional conflicts || Pro-European || new war || A good relationship || The pro-Western orientation || anti-Orthodox || homosexuals || recognition || The approach || parliamentary elections || Merkel || PAS || The non -governmental organizations || favor || corruption || Covid-19 statistics || NATO's expansionist plans || Soroseelutu Ashoona || The sovereignty || unfriendly countries || NO.md || Ludmila Belcencova || internal affairs || the end of the Republic of Moldova || The right || choices || The special troops || drought causes || regulation || authoritarian leader || NATO's existence || invention || hostility || butThe respective statement || many respects || The Russian Foreign Ministry || Russian Foreign Ministry || Peter Michalko || nuclear confrontation || financial collapse || Spain || the Baltic States || Russias economy || The sanctions || Stefan cel Mare || Mares Moldova || successor state || Stefan || Kaliningrad || `` virus || water resources || Destabilization || Corporation Rand || Plan || puppet || Republic of Moldova || Moldovan || Moldavian || Sweden || nato || Union of the Republic of Moldova || hybrid war || unionist || Natalia Gavrilăța || Sputnik V || Sputnik v

Community statements

- The special troops of the US, Romania and Moldova are preparing to attack Transnistria
- The approach of the Republic of Moldova to the EU will lead to the recognition of marriages between homosexuals
- "Romania, bridgehead for a NATO-Russia war"
- Romania threatens the Republic of Moldova, but will not be able to do anything when NATO will abandon it
- NATO fights with Russia to the last Ukrainian

Figure 21: Example of the results of the analysis of the MindBugs Discovery application



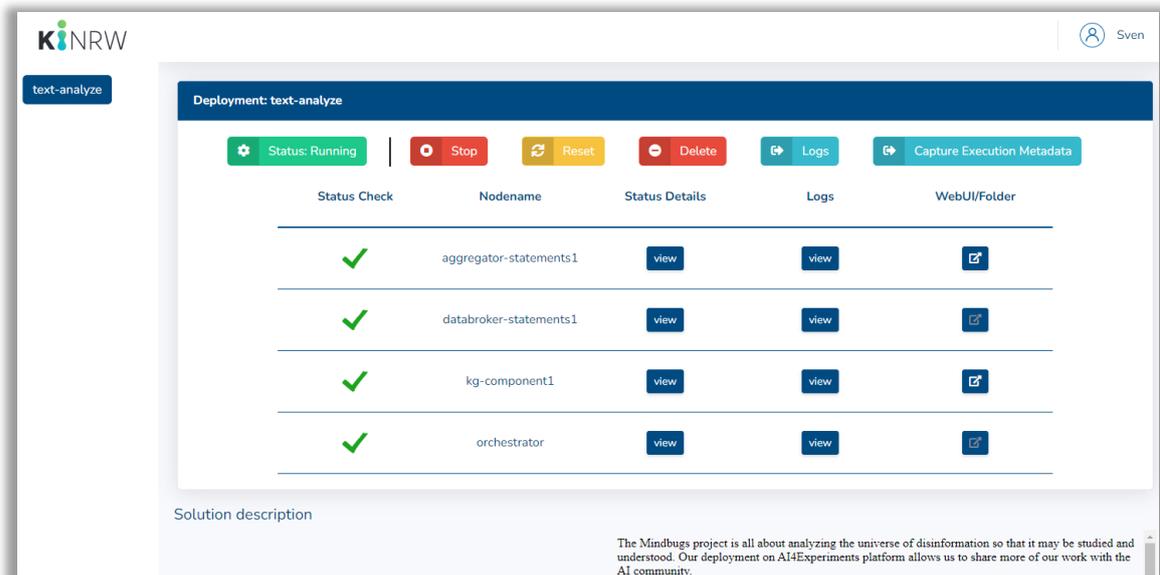


Figure 22: MindBugs Discovery pipeline running in AI-Lab Playground

How MindBugs Discovery pipeline integrates into the AI community⁸⁶

The versatility of this system allows for a range of valuable applications. Each component is designed to operate both independently and as part of a larger ensemble, offering flexibility and adaptability.

Suppose there's a need to work with a different dataset. In that case, it's as straightforward as making a simple change within the DataBroker from the AI-Builder platform. The Aggregator component seamlessly adjusts to the new data, automatically adapting its training process.

If the goal is to develop a distinct model for enhanced data analysis and improved outcomes, the Aggregator component can be swapped out to accommodate this endeavour.

Similarly, should the focus be on refining the knowledge graph (KG) and its community identification algorithm, only the KG component can be replaced, leaving the other components untouched.

Another feature of this system is that it allows seven different combinations. These combinations allow for utilizing just one component, a pair of components, or all three, offering a range of choices to cater to diverse project requirements and objectives. This inherent flexibility is a key feature of the system, enabling users to customize their approach as needed.

⁸⁶ Source: <https://github.com/cheresioana/ai4media/blob/main/README.md>, last visited 27/08/2024





6 Interoperability with other media platforms

Going beyond the publication and technical integration of AI resources, AI4Media also provides showcases for the interoperability of AI-Builder with other media platforms, which is a key success factor for wider dissemination on both sides.

In terms of the work of Task 7.4 “Achieving interoperability between the AI-on-Demand Platform and Media Platforms”, interoperability of different systems is demonstrated by reusing individual components in another system. This works excellently if the systems have a modular structure, for example in the sense of a microservice architecture. The concept of AI-Builder allows the provision of individual AI components as models in the AI-Builder Marketplace. These must be provided as Docker containers according to a uniform container specification. The Docker containers must be able to communicate via a formally defined interface. These technical properties make it very easy to use components from AI-Builder in other systems if they implement the same interfaces. Likewise, modular components from other systems can be used in AI-Builder if they are deployed as Docker containers according to the specification.

Deliverables D7.1 and D7.2 have already provided different concepts and example implementations for the interoperability between the AI-on-Demand Platform and Media Platforms. The following showcase demonstrates another approach for the reusability of models from AI-Builder in other media platforms.

6.1 Speech2Text component integration to Truly Media platform

In this showcase, the Speech2Text⁸⁷ component from AI-Builder was selected as an implementation of a tool that provides speech to text transcription and was integrated in the Truly Media platform. The Speech2Text component is used to recognize English audio speech and convert an audio input into text.

In addition, the pipeline is also connected to a shared storage volume used to store the results in the form of text files.

6.1.1 Idea and integration plan

The Truly Media platform⁸⁸ by ATC and DW aggregates content from a large variety of sources such as different Social Media platforms, blogs, websites, RSS feeds etc. In most cases, content includes media assets like videos, audios, and images. For the audio files that are aggregated it is crucial to implement a speech-to-text functionality to convert spoken words into text, enabling comprehensive analysis and verification of audio content. To meet this need, the Speech2Text component (published in the AIoD) was integrated into the Truly Media platform ensuring transcription of audio content for further examination and validation.

From an architectural point of view, two new modules Atc-sp2t-broker and Atc-sp2t-client have been developed to support a REST API service which expects a URL pointing to a wav audio to

⁸⁷ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=1066f718-e618-401c-a786-c9c2dd8218aa&revisionId=b49cca42-4c81-43af-b634-e0f1116900a7>, last visited 27/08/2024

⁸⁸ <https://www.truly.media/>, last visited 27/08/2024



be processed. The first module `Atc-sp2t-broker` is responsible for the http requests from the UI and triggers the GRPC requests towards the second module. The second module `Atc-sp2t-client` acts as gRPC client that receives the requests from broker and triggers the `Speech2Text` component. In the next stage of the pipeline, the `Speech2Text` component processes the audio file and the outcome text is stored in a zip file in the shared folder of the Kubernetes persistent volume (see Figure 23).

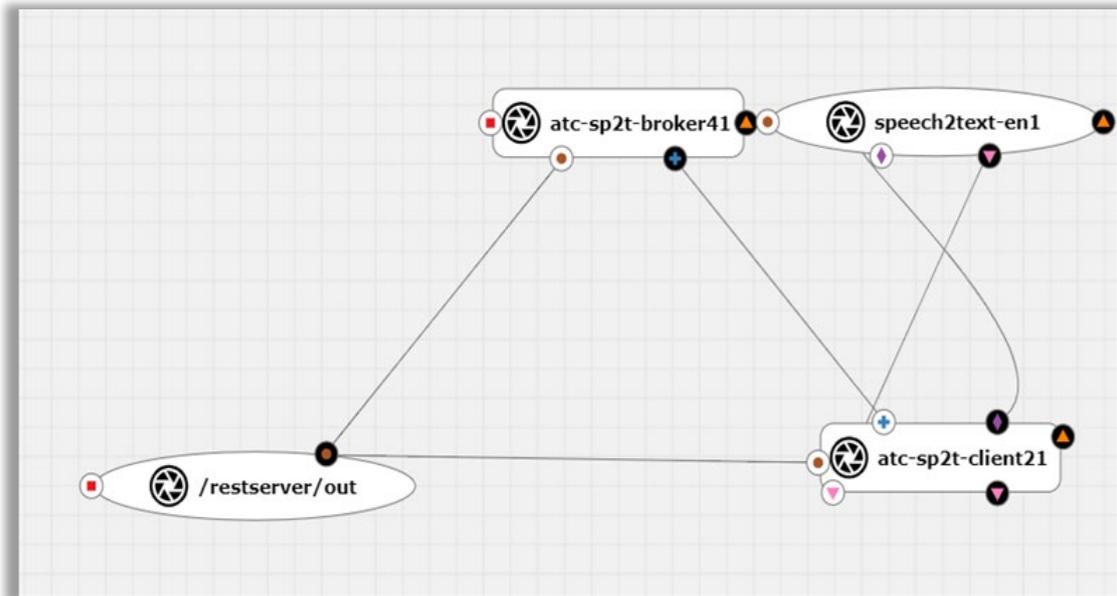


Figure 23: AI4MediaSpeech pipeline for Truly Media integration

From a high-level point of view, the implemented workflow involves exchanging an audio (wav file) URL for a text, generated by the AI4MediaSpeech pipeline. The new modules were onboarded to AI-Builder and the new pipeline (AI4MediaSpeech) was created utilizing these API modules. The modules `Atc-sp2t-broker` and `Atc-sp2t-client` can be dockerized and uploaded to any registry with public access so that it can be retrieved by the AIoD. Currently, the latest docker images can be found at ATC's docker hub⁸⁹. Within the AIoD, the modules can be onboarded and published in the marketplace. The pipeline is deployed using the AI-Lab Playground that is provided for easy deployments from AI-Builder. Figure 24 shows the integration architecture that has been implemented.

⁸⁹ <https://hub.docker.com/r/atclub/ai4media-speech2textbroker> and <https://hub.docker.com/r/atclub/ai4media-speech2text>, both last visited 27/08/2024



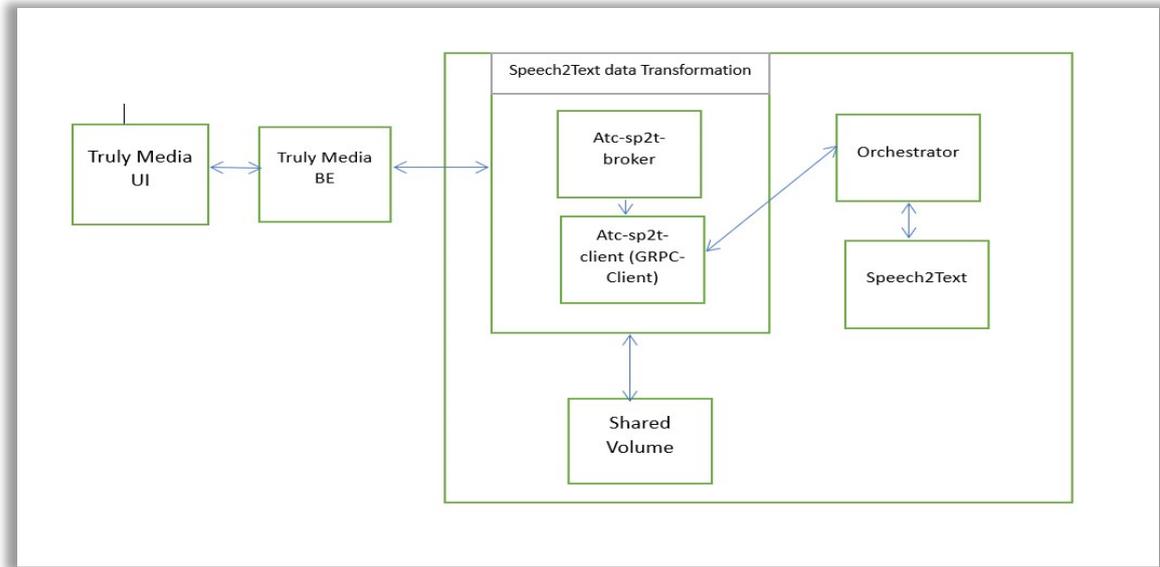


Figure 24: Truly Media and AI4MediaSpeech Pipeline integration architecture

6.1.2 Truly Media and speech to text workflow

The following steps represent the workflow when using Truly Media with the AI4MediaSpeech pipeline:

- A Truly Media (TM) user uploads an audio file (wav) in the TM platform and requests to extract the text from the audio by pressing the speech To Text button.
- The audio's URL is provided to the Atc-sp2t-broker which triggers the rest of the modules to process it.
- When the audio is processed successfully, the results are stored to the shared storage.
- The TM user requests to download the results.
- The new module (Atc-sp2t-broker) finds the results from the shared storage and creates a zip file which is downloaded through the TM platform.
- The user is provided with the generated results from the Speech2Text service for further analysis.

6.1.3 Truly Media and speech to text demonstration

In the verification page of the Truly Media platform for audio wav files a "Speech To Text" button has been added to give to the users the ability to transcribe the audio file to text. Figure 25 shows the actual image where the users can press the "Speech To Text" button and trigger the workflow described in the previous subsection.



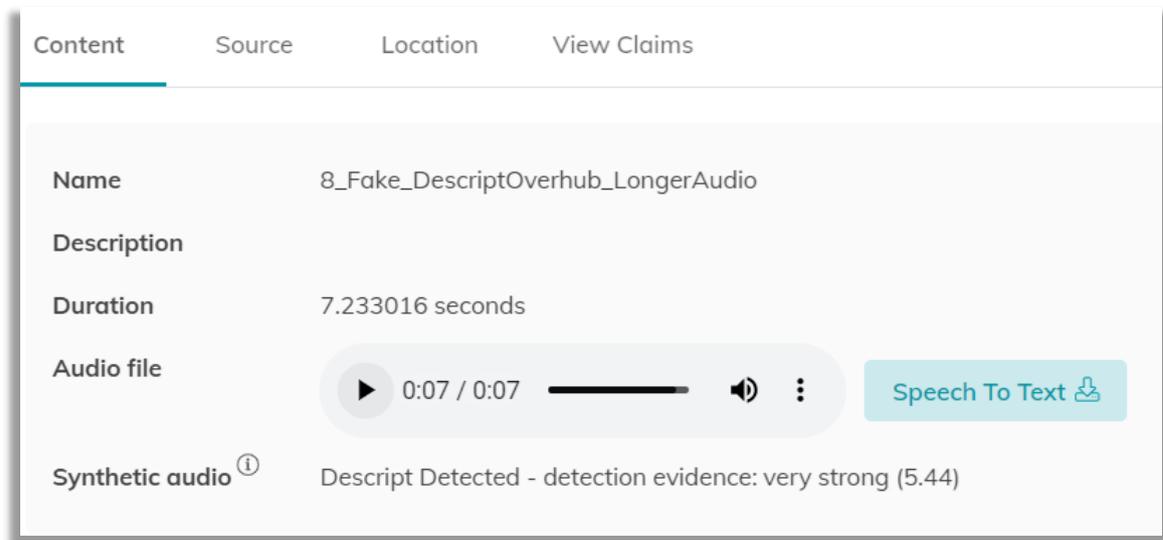


Figure 25: Trigger the Speech2Text service in Truly Media

When the Speech2Text service has processed the audio, the users are able to download the results from the browser (zip file) for further analysis (see Figure 26). An example for the extracted text can be seen below in Figure 27. In the specific scenario, the audio file that was used is available for download⁹⁰.

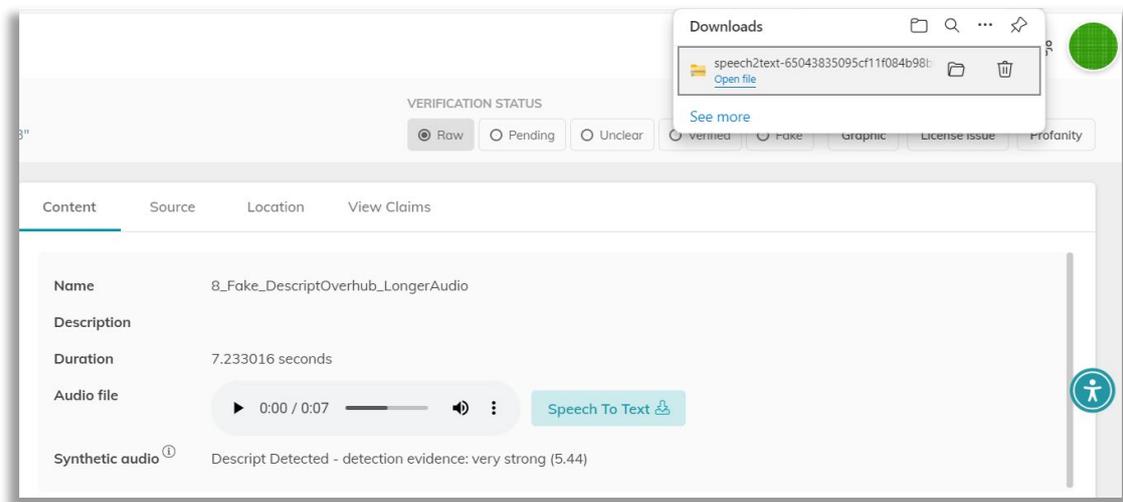
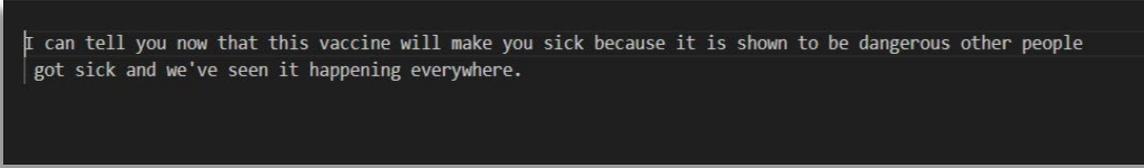


Figure 26: Download dialog for Zip archive with the results

⁹⁰ Download link: <https://s3.eu-central-1.amazonaws.com/app.truly.media/uploads/e5fb396d-75c3-496e-800b-bc9bf1637ba3.wav>, last visited 27/08/2024





```
I can tell you now that this vaccine will make you sick because it is shown to be dangerous other people got sick and we've seen it happening everywhere.
```

Figure 27: View of the extracted text result in Truly Media

This showcase adds another valuable feature to the Truly Media system by reusing technology provided by the AIoD.

6.2 Summary of showcases for interoperability

AI4Media facilitates the interoperability of AI-Builder with other media platforms, aiming for broader dissemination. Task 7.4 focuses on demonstrating system interoperability through the reuse of modular components. AI-Builder models, provided as Docker containers with standardized interfaces, are easily integrated into other systems, and vice versa.

Several showcases⁹¹ have illustrated this interoperability.

Provision of recognAIze in AI-Builder

Fraunhofer IAIS's recognAIze system⁹², which processes scanned documents using AI and Deep Learning, has its components published in AI-Builder. A corresponding pipeline has been created and published⁹³, which can be deployed in AI-Lab Playground. Both, the components, available as Docker containers, and the pipeline enable public experimentation.

Integration of recognAIze pipeline in Truly Media

The recognAIze pipeline from AI-Builder, which includes OCR functionality, was integrated into the Truly Media platform, automating text extraction from images for content analysis.

Mining Services from Fraunhofer in AI-Builder

Components from Fraunhofer's Mining Platform, such as the multilingual NER mining service, have been adapted and integrated into AI-Builder⁹⁴, demonstrating cross-platform interoperability.

⁹¹ Showcases 6.2.1 to 6.2.4 have been described in detail in deliverable D7.2, available for download at: <https://www.ai4media.eu/reports/extended-version-of-the-integration-result-with-the-ai-on-demand-platform-d7-2/>, last visited 27/08/2024

⁹² <https://recognaize.de/>, last visited 27/08/2024

⁹³ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=fca70f4f-d6b7-4fed-a98a-8800b7831ef8&revisionId=c7b3cfaf-7960-472b-91e3-03b930dca96a>, last visited 27/08/2024

⁹⁴ <https://aiexp.ai4europe.eu/#/marketSolutions?solutionId=27e777bc-2968-427c-9df5-9f5593613475&revisionId=77f58af9-73d4-48b8-9237-7c6e1d3cdb97>, last visited 27/08/2024





NER Model in RAI Concept Book

The NER model from AI-Builder was integrated into the RAI Concept Book, enhancing its ability to perform thematic searches across diverse information sources (see section 4 in D8.4 “Intermediate Use Case Demonstrators and Applications”).

Speech2Text in Truly Media

The Speech2Text component from AI-Builder was integrated into the Truly Media platform, providing automated transcription of audio files for further analysis.

The integration efforts highlighted by AI4Media demonstrate significant progress in achieving interoperability between AI-Builder and various media platforms. The modular structure and standardized Docker container specifications enable seamless component reuse and system integration. This fosters a collaborative environment where researchers and developers can easily share and build upon each other’s work, accelerating innovation and development. The initiative democratizes access to advanced AI technologies, allowing smaller organizations and academic institutions to leverage cutting-edge tools without substantial investment. These showcases also illustrate the practical benefits of interoperability, such as improved automation, enhanced content analysis, and broader accessibility to advanced AI tools. Finally, by enabling the reuse of AI components, AI4Media contributes to more sustainable development practices. This reduces redundancy and waste in AI development efforts, ensuring that resources are used more efficiently and effectively.



7 Management of the European AI-on-Demand Platform, development and operation of AI4EU Experiments⁹⁵

Task T7.6 was established in AI4Media⁹⁶ to ensure the sustainability of the AI-on-Demand Platform (AIoD) after the end of the AI4EU project and to bridge a time gap of 6 months until the start of the AI4Europe project on 01/07/2022. The goal of this task was to seamlessly continue the technical governance, the operation and maintenance of the infrastructure for the AIoD. The following activities were performed within Task 7.6.

Continuation of Technical Governance Board (TGB)

The Technical Governance Board (TGB) was introduced by AI4EU as a regular bi-monthly meeting to discuss technical contributions and connect the relevant experts to advance the platform. The continuation of the AI4EU Technical Governance Board (TGB) after 31/12/2021 was implemented with T7.6. Four TGB meetings were organised within AI4Media and were chaired by FHG-IAIS.

Development of AI4EU Experiments

Some developments have been driven forward during AI4Media's responsibility for AI4EU Experiments, like the integration of the EU Login, the publication of the platform's source code as an Eclipse project, the provision and integration of AI-Lab Playground, and the provision of a complex example pipeline.

Hosting of website and AI4EU Experiments

The hosting of the AIoD website and AI4EU Experiments were continued seamlessly by FhG-IAIS, including the necessary technical support and operational infrastructure (e.g., regular backup, security updates).

Operation of AI4EU Experiments

This task includes the technical operation of the servers, as well as content moderation work for the onboarding models provided by users of the platform.

The outcomes of the activities performed in the context of Task 7.6 “Management of the European AI-on-demand Platform, development and operation of AI4EU Experiments” are documented in detail in the deliverable D7.2⁹⁷.

⁹⁵ In this section the deprecated term “AI4EU Experiments” is used, because all activities documented in this section have been completed before the platform was renamed to “AI-Builder”.

⁹⁶ This was approved with the first amendment to the grant agreement: AMENDMENT Reference No AMD-951911-18

⁹⁷ Available for download at: <https://www.ai4media.eu/reports/extended-version-of-the-integration-result-with-the-ai-on-demand-platform-d7-2/>, last visited 27/08/2024



8 Conclusions

This deliverable, with the publicly available components listed in this document, proves that the integration of AI4Media into the AI on Demand platform has been very successful in all aspects⁹⁸:

- **AIoD Community Platform:** AI4Media has contributed significantly to the content created by the AI community on the website. Among them, there are 196 assets published in the AI Assets Catalog which are linked to AI4Media (see section 3.2). KPI 5.1 in AI4Media had the objective of at least 30 assets to be published. This KPI has been exceeded by far.
- **AI-Cafes:** There were 42 AI-Cafes under the organisation of AI4Media in the period from 2020 to 2024. The target number of 30 live recorded webinars (KPI 5.4) has been clearly exceeded. Considering the entire series of AI-Cafes that started within the AI4EU project, a total of 108 video recordings of AI-Cafe sessions are accessible in the public AI-Cafe video channel⁹⁹ as well as on the AI-Cafe YouTube channel¹⁰⁰. This is proof of the success of this format in supporting the creation of a European AI community.
- **AI-Builder Marketplace:** The technical integration of AI4Media results into AI-Builder has proven successful. 51 models have been contributed to AI-Builder Marketplace by AI4Media. In addition, other models published on the marketplace can be considered suitable for media use cases¹⁰¹.
 - KPI 5.2 targeted “>15 AI4EU components used in AI4Media research and use cases”¹⁰². A total of 36 components are used. This number is well in excess of the target.
 - “>10 experiments (research, use cases, cascading funding, etc.) from AI4Media carried out on the AI4EU platform”¹⁰² was the goal of KPI 5.3. Within the project, 16 pipelines have been published to the AI-Builder Marketplace.
- **Interoperability with other media platforms:** A concept for interoperability between AI-Builder and the Fraunhofer Mining Platform as an example media platform has been presented in the earlier deliverable D7.1. Five different integrations of media platforms with AI-Builder have been performed, as described in section 6. In addition, 15 experiments and use cases demonstrators have been developed in AI4Media WP8. All of them use AI components, some of which are also onboarded in AI-Builder.

⁹⁸ All numbers about achieved results as of 27/08/2024

⁹⁹ <https://www.gotostage.com/channel/ai-cafe>, last visited 27/08/2024

¹⁰⁰ <https://www.youtube.com/channel/UCWjwTdAPRKHVcj6zudV6ZXQ>, last visited 27/08/2024

¹⁰¹ For details see section 11, tables 9 and 10

¹⁰² AI4Media Grant Agreement (Grant agreement ID: 951911)

The European AI-on-Demand Platform (AIoD) consists of different offerings that allow the AI community to

- Share AI-related knowledge, assets, services or tools
- Make use of the numerous available resources
- Learn about the potential and opportunities of AI applications
- Engage with other peers and experts¹⁰³

The offers available on the platform are constantly increasing, as is the community itself. AI4Media has contributed significantly to the AIoD ecosystem and has provided numerous resources to be used in future in experiments, projects, applications, and other endeavours. The future of the AIoD itself is secured by currently active funded projects “AN AI ON-DEMAND PLATFORM TO SUPPORT RESEARCH EXCELLENCE IN EUROPE” (aka AI4Europe)¹⁰⁴ and “Development and Deployment of the European AI-on-demand Platform” (aka DeployAI)¹⁰⁵.

¹⁰³ <https://aiod.eu/about>, last visited 27/08/2024

¹⁰⁴ For details see <https://cordis.europa.eu/project/id/101070000>, last visited 27/08/2024

¹⁰⁵ For details see <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43152860/101146490/DIGITAL>, last visited 27/08/2024





9 Appendix 1: List of AI assets in Assets Catalog

The following assets have been published in the AIoD Assets Catalog¹⁰⁶. For an up-to-date list of published AI assets and links to the assets please always visit the AI4Media project page¹⁰⁷ on the AIoD Community Platform.

Name	Contributor	Asset Type
100-Driver: A Large-scale, Diverse Dataset for Distracted Driver Classification	UNITN	Dataset
2D Computer Vision and Image	AUTH	As a Service
2D Digital Filter Design and Implementation Lecture	AUTH	Tutorial
2D Systems Lecture	AUTH	Tutorial
3D Computer Graphics and Virtual Reality	AUTH	As a Service
3D Imaging	AUTH	As a Service
3D Object Localization Lecture	AUTH	Tutorial
3D-Aware Semantic-Guided Generative Model for Human Synthesis	UNITN	Docker Container
4k Video Super-Resolution Detection	BSC	ML Model
4K Video Super-Resolution Dataset BVI-DVC-SR	BSC	Dataset
A quantification-based method for the estimation of algorithmic fairness	CNR	Library
Acoustics, Speech, Natural Language Processing and Analysis	AUTH	As a Service
AdaFamily optimizer	JR	Library
Adaptive soft contrastive learning	QMUL	ML Model
Advanced Deep Learning	AUTH	As a Service
AdvisIL - A Class-Incremental Learning Advisor	CEA	Library
AI for Visual Vehicles Counting	CNR	Docker Container
AI Science and Engineering: A new scientific discipline?	AUTH	As a Service
AniFormer	UNITN	ML Model
atcrecognize	ATC	ML Model
atranscribe	ATC	ML Model
AttentionGAN: Unpaired Image-to-Image Translation	UNITN	Docker Container
Attribute-preserving Face Dataset Anonymization via Latent Code Optimization	QMUL, UNITN	ML Model
Audio Deepfake Detection with GradCam Saliency Map Explainability	CERTH	ML Model
Audio Reuse Detection	FhG-IDMT	Executable
Augmentation-free unsupervised approach for point clouds	UNITN	Docker Container

¹⁰⁶ as of 27/08/2024

¹⁰⁷ https://www.ai4europe.eu/ai-community/projects/ai4media?category=ai_assets, last visited 27/08/2024





Name	Contributor	Asset Type
AUTH GreekPolitics Dataset	AUTH	Dataset
Auto Tagging	IMG	Docker Container
Autonomous Cars	AUTH	As a Service
Autonomous Drones	AUTH	As a Service
Autonomous Marine Vessels	AUTH	As a Service
Autonomous Systems	AUTH	As a Service
Batch-efficient EigenDecomposition for Small and Medium Matrices	UNITN	Docker Container
Bipartite Graph Reasoning GANs for Person Pose and Facial Image Synthesis	UNITN	Docker Container
Camera geometry Lecture	AUTH	Tutorial
Cascaded Cross MLP-Mixer GANs for Cross-View Image Translation	UNITN	ML Model
CGTransformer	UNITN	ML Model
CL2R: Compatible Lifelong Learning Representations	UNIFI	ML Model
Class Incremental Learning Methods for Visual Tasks	CEA	ML Model
class-incremental Novel Class Discovery	UNITN	Docker Container
CO2A - Contrastive Conditional domain Alignment	UNITN	ML Model
Color Theory Lecture	AUTH	Tutorial
Communications	AUTH	As a Service
Computational Aesthetics Lecture	AUTH	Tutorial
Computational Cinematography Lecture	AUTH	Tutorial
Computational Geometry Lecture	AUTH	Tutorial
Computer Vision	AUTH	As a Service
Constrained Map-Elites	UM	Tutorial
ContraCLIP: Interpretable GAN generation driven by pairs of contrasting sentences	QMUL	ML Model
Contrastive Supervised Distillation for Continual Representation Learning	UNIFI	ML Model
CoReS: Compatible Representations via Stationarity	UNIFI	ML Model
Curriculum Graph Co-Teaching for Multi-target Domain Adaptation	UNITN	Docker Container
CVML Development and Programming Tools	AUTH	As a Service
CVML Mathematical Foundations	AUTH	As a Service
Cycle-In-Cycle GANs	UNITN	ML Model
DDSP-Piano: Differentiable Piano model for MIDI-to-Audio Performance Synthesis	IRCAM	ML Model
decentralized-gnn	CERTH	Library
Deep Micro-Dictionary Learning and Coding Network	UNITN	ML Model
Deep Quality Diversity	UM	Library
Differentiable SVD	UNITN	Library





Name	Contributor	Asset Type
Diffprivlib: The IBM Differential Privacy Library	IBM	Library
Digital Image Compression Lecture	AUTH	Tutorial
Digital Image Filtering Lecture	AUTH	Tutorial
Digital Image Formation Lecture	AUTH	Tutorial
Digital Image Processing Lecture	AUTH	Tutorial
Digital Images and Videos Lecture	AUTH	Tutorial
Digital Images Lecture	AUTH	Tutorial
Digital Signal Processing and Analysis	AUTH	As a Service
Discrete Variational Multiple Sequence (DVMS) (Head Motion Prediction in 360° Videos)	3IA	ML Model
DivClust: Controlling Diversity in Deep Clustering	QMUL	ML Model
DnS: Distill-and-select for efficient and accurate video indexing and retrieval	CERTH, QMUL	ML Model
Edge Detection Lecture	AUTH	Tutorial
Edge Guided GANs with Semantic Preserving for Semantic Image Synthesis	UNITN	Docker Container
Efficient Training of Visual Transformers with Small Datasets	UNITN	ML Model
Elastic Feature Consolidation For Cold Start Exemplar-Free Incremental Learning	UNIFI	ML Model
Entity Recognizer	FhG-IAIS	Docker Container
Explainable Video Summarization	CERTH	Library
Face Detection	FhG-IAIS	Docker Container
Face Verification with Challenging Imposters and Diversified Demographics	CEA, UPB	Dataset
Fast 2D Convolutions Algorithms Lecture	AUTH	Tutorial
Fast Differentiable Matrix Square Root	UNITN	Docker Container
Fast SR-UNet	UNIFI	ML Model
Faster than real-time detection of shot boundaries, sampling structure and dynamic keyframes in video	JR	Executable
Feature Translation for Exemplar-Free Class-Incremental Learning	CEA	Library
Few-Shot Object Detection (FsDet) - Training tools for custom data	JR	Library
Frame analysis with GPT3.5	Idiap	Jupyter Notebook
Fraunhofer OCR Engine (recognaize-ocr)	FhG-IAIS	Docker Container
Fraunhofer Table Extraction	FhG-IAIS	Docker Container
GAP: Differentially Private Graph Neural Networks with Aggregation Perturbation	Idiap	Jupyter Notebook





Name	Contributor	Asset Type
Generalized Funnelling (Heterogeneous Document Embeddings) Code	CNR	Library
gnntf: A Flexible Deep Graph Neural Network Framework	CERTH	Library
GTA Dataset	CNR	Dataset
High-Dynamic Range Imaging Lecture	AUTH	Tutorial
Human Centered Computing	AUTH	As a Service
Human Visual System Lecture	AUTH	Tutorial
HyperReenact: One-Shot Reenactment via Jointly Learning to Refine and Retarget Faces	QMUL	ML Model
ICS: Interactive Classification System	CNR	Docker Container
IEP-GAN: Intrinsic-Extrinsic Preserved GANs for Unsupervised 3D Pose Transfer	UNITN	ML Model
Image / Video DeepFake Detection service	CERTH	As a Service
Image Acquisition Lecture	AUTH	Tutorial
Image Features Lecture	AUTH	Tutorial
Image Perception Lecture	AUTH	Tutorial
Image Processing	AUTH	As a Service
Image Quality Lecture	AUTH	Tutorial
Image Registration Lecture	AUTH	Tutorial
Image Sampling Lecture	AUTH	Tutorial
Image Transforms Lecture	AUTH	Tutorial
Image Typology Lecture	AUTH	Tutorial
Image Verification Assistant	CERTH	As a Service
InDistill	CERTH	ML Model
Introduction to 2D Computer Vision Lecture	AUTH	Tutorial
Introduction to AI Science and Society	AUTH	Tutorial
Introduction to Computer Vision Lecture	AUTH	Tutorial
Introduction to Image Processing Lecture	AUTH	Tutorial
JECT-CLONE: AI-Generated Daily Emails (OC#2)	JECT.AI Limited	As a Service
JGNN library for native Java implementation of graph neural networks	CERTH	Library
L-CAM: Learning Visual Explanations for DCNN-Based Image Classifiers Using an Attention Mechanism	CERTH	ML Model
Learning from Label Relationships in Human Affect	QMUL	ML Model
Learning to quantify: LeQua 2022 datasets	CNR	Dataset
Learning to quantify: LeQua 2024 dataset	CNR	Dataset
LERVUP - LEarning to Rate Visual User Profiles	CEA	Library
Lightweight Face Detectors	CERTH	ML Model
Live Speech Recognition	FhG-IAIS	Docker Container
LLM fine-tuned to follow instructions in Italian	RAI	ML Model





Name	Contributor	Asset Type
LLMAKER - Consistent Game Content Creation via LLMs	UM	Library
Locally Private Graph Neural Networks	Idiap	Jupyter Notebook
Long-Tailed Class Incremental Learning	UNIFI	ML Model
Machine Learning	AUTH	As a Service
MAD-TSC: A Multilingual Aligned News Dataset for Target-dependent Sentiment Classification	CEA	Dataset
Manifold mixing model soups for better out-of-distribution accuracy	JR	Executable
MaskCon: Masked Contrastive Learning for Coarse-Labelled Dataset	QMUL	ML Model
Mathematical Morphology Lecture	AUTH	Tutorial
Medical Image and Signal Analysis	AUTH	As a Service
Memory-based Multi-Source Meta-Learning (M3L)	UNITN	ML Model
Mini-batch trimming	JR	Library
Monte Carlo Elites	UM	Library
Music Classification	FhG-IDMT	Docker Container
Music Detection	FhG-IDMT	Executable
Neighborhood Contrastive Learning for Novel Class Discovery	UNITN	ML Model
Network Theory & Social Media Analysis	AUTH	As a Service
Neural Image Compression Lecture	AUTH	Tutorial
Neural Networks and Deep Learning	AUTH	As a Service
Neural Semantic 3D World Modeling and Mapping Lecture	AUTH	Tutorial
Neural SLAM Lecture	AUTH	Tutorial
NEFER a Dataset for Neuromorphic Event-based Facial Expression Recognition	UNIFI	Dataset
Night and Day Instance Segmented Park (NDISPark) Dataset	CNR	Dataset
Object Detection	FhG-IAIS	Docker Container
Object Pose Estimation Lecture	AUTH	Tutorial
ObjectGraphs (Video Event Detection)	CERTH	Library
PandA: Unsupervised learning of parts and appearances in the feature maps of GANs	QMUL	ML Model
Parts of Speech–Grounded Subspaces in Vision-Language Models	QMUL	ML Model
Planckian jitter: enhancing the color quality of self-supervised visual representations	UNIFI	ML Model
Playable Video Generation	UNITN	ML Model
Product Reviews Dataset	CNR	Dataset
Product Reviews for Ordinal Quantification	CNR	Dataset
ProGAP: Progressive Graph Neural Networks with Differential Privacy Guarantees	Idiap	Jupyter Notebook





Name	Contributor	Asset Type
Prompting Visual-Language Models for Dynamic Facial Expression Recognition	QMUL	ML Model
pygrank	CERTH	Library
QuaPy - A Python library for learning to quantify (class prevalence estimation, media sample -> percentage)	CNR	Library
Regular Polytope Networks	UNIFI	ML Model
Robotics and Automatic Control	AUTH	As a Service
Self-Supervised Representation Learning with Cross-Context Learning between Global and Hypercolumn Features	QMUL	ML Model
Self-Supervised Video Similarity Learning	CERTH, QMUL	ML Model
Semantic Middleware	CNR	Executable
Shape Description Lecture	AUTH	Tutorial
Signals and Systems	AUTH	As a Service
Simultaneous Localization and Mapping Lecture	AUTH	Tutorial
Smemo: Social memory for trajectory forecasting	UNIFI	ML Model
Social Impact of AI Science and Engineering: Information Filtering and Disinformation	AUTH	As a Service
solo-learn	UNITN	Library
Songtradr API (OC#1)	Songtradr	As a Service
Speech Detection	FhG-IDMT	Executable
SSR: An Efficient and Robust Framework for Learning with Unknown Label Noise	QMUL	ML Model
Stationary Representations: Optimally Approximating Compatibility and Implications for Improved Model Replacements	UNIFI	ML Model
Stereo and Multiview Imaging Lecture	AUTH	Tutorial
Structure from Motion Lecture	AUTH	Tutorial
StyleMask: Disentangling the Style Space of StyleGAN2 for Neural Face Reenactment	QMUL	ML Model
Super Resolution Lecture	AUTH	Tutorial
Synthetic Social Agents (SSA) dataset	UNIFI	Dataset
Tensor Component Analysis for Interpreting the Latent Space of GANs	QMUL	ML Model
Text-to-Visual Search Engine	CNR	Docker Container
The Devil is in the GAN: Defending Deep Generative Models Against Backdoor Attacks	IBM	Jupyter Notebook
The Florence 4D Facial Expression Dataset	UNIFI	Dataset
The ImageCLEFAware 2021 Dataset	CEA, UPB	Dataset
Topic change detector in Italian news content	RAI	ML Model
Unique Concept Vectors through Latent Space Decomposition	HES-SO	Jupyter Notebook





Name	Contributor	Asset Type
Universal Minimization on the Node Domain	CERTH	Executable
Video Classification	FhG-IAIS	Library
Video Processing and Analysis	AUTH	As a Service
Video Shot Detection	FhG-IAIS	Library
WarpedGANSpace - Finding non-linear RBF paths in GAN latent space	QMUL	ML Model
Whitening for Self-Supervised Representation Learning	UNITN	ML Model
WildCapture	UNIFI	Dataset
Word-Class Embeddings for Multiclass Text Classification	CNR	Library
yamlRes: Retrieving algorithm component combinations from online (or local) yaml resources	CERTH	Library
Zero-Shot Visual Concept Recognition	FhG-IAIS	Docker Container

Table 7: List of AI assets in Assets Catalog contributed by AI4Media (titles are linked to assets in Assets Catalog¹⁰⁸)

¹⁰⁸ All links were last visited 27/08/2024





10 Appendix 2: List of AI assets in Zenodo

The following dataset and software assets have been published in Zenodo¹⁰⁹. For an up-to-date list of published AI assets and links to the assets please always visit the AI4Media projects space¹¹⁰ on Zenodo.

Name	Contributor	Asset Type
A deep learning-based dataset of WFA-positive perineuronal nets and parvalbumin neurons localizations in the adult mouse brain	CNR	Dataset
arXiv abstracts and titles from 1,469 single-authored papers (100 unique authors) in computer science	CNR	Dataset
Bus Violence: a large-scale benchmark for video violence detection in public transport	CNR	Dataset
Cherenkov Telescope Data for Ordinal Quantification	CNR	Dataset
CIMA Project AI4Media (OC#1)	ADVERIFAI LTD	Software
COCO, LVIS, Open Images V4 classes mapping	CNR	Dataset
Counting Perineuronal Nets	CNR	Software
Face Verification with Challenging Imposters and Diversified Demographics	CEA, UPB	Dataset
Hebbian Learning GitHub Repository	CNR	Software
HLT-ISTI/QuaPy: QuaPy v0.1.7	CNR	Software
HLT-ISTI/QuaPy: QuaPy v0.1.8	CNR	Software
ICS: Interactive Classification System	CNR	Software
IDMT Audio Phylogeny Dataset	FhG-IDMT	Dataset
Latent Diffusion Models for Attribute-Preserving Image Anonymization	Politecnico di Torino	Software
Learning to quantify: LeQua 2022 datasets	CNR	Dataset
Night and Day Instance Segmented Park (NDISPark) Dataset	CNR	Dataset
ODSS: An Open Dataset of Synthetic Speech	CERTH, FhG-IDMT	Dataset
ÖWF-OD - ÖWF Object Detection Dataset	JR	Dataset
PeopleAtPlaces: Dataset for bustle and shot type classification	JR	Dataset
Pest Sticky Traps: a dataset for Whitefly Pest Population Density Estimation in Chromotropic Sticky Traps	CNR	Dataset
Product Reviews Dataset	CNR	Dataset
Product Reviews for Ordinal Quantification	CNR	Dataset
Recommendation dataset for Cultural Heritage (OC#1)	IN2 Digital Innovations GmbH	Dataset

¹⁰⁹ as of 27/08/2024

¹¹⁰ <https://zenodo.org/communities/ai4media/records>, last visited 27/08/2024





Name	Contributor	Asset Type
Shifts Multiple Sclerosis Lesion Segmentation Dataset Part 1	HES-SO	Dataset
Shifts Multiple Sclerosis Lesion Segmentation Dataset Part 2	HES-SO	Dataset
Songtradr API (OC#1)	Songtradr	As a Service
Suisse Romande Local News Dataset	Idiap	Dataset
The ImageCLEFAware 2021 Dataset	CEA, UPB	Dataset
ToDY: Time of Day/Year: Dataset for visual time of day and season classification	JR	Dataset
TRACES Bulgarian Telegram Dataset Annotated with Linguistic Markers of Lies (OC#1)	Sofia University	Dataset
TRACES Bulgarian Twitter Dataset on Covid-19 Annotated with Linguistic Markers of Lies (OC#1)	Sofia University	Dataset
TRACES Bulgarian Twitter Dataset on Famous Bulgarian Political Cases of Suspected Lies, Annotated with Linguistic Markers of Lies (OC#1)	Sofia University	Dataset
TRACES Bulgarian Twitter Dataset on Lies and Manipulation Annotated with Linguistic Markers of Lies (OC#1)	Sofia University	Dataset
TRACES Guidelines for re-creating methods for automatic detection of disinformation, untrue information, and textual deepfakes using psycholinguistic markers of lies for other (especially lower-resourced) languages (OC#1)	Sofia University	other
TRACES Hierarchical Classification of Categories of Linguistic and Psycholinguistic Markers of Deception with Bulgarian Expression Lists for Disinformation Detection (OC#1)	Sofia University	other
TRACES Model for Detecting Automatically Generated Bulgarian Texts with the GPT-2 and ChatGPT models with F1-Score 0.88 (OC#1)	Sofia University	Software
TRACES Model for Detecting Untrue Bulgarian Texts with F1-Score 0.96 (OC#1)	Sofia University	Software
TRACES Python Scripts for Downloading from Twitter, Cleaning, and Annotating with the Linguistic Markers of Deceptions New (Bulgarian) Text Datasets (OC#1)	Sofia University	Software
TRACES Telegram and Twitter Dataset with Bulgarian Journalists Manual Annotations of True/Untrue and Disinformation/Not and Automatic Annotations for Markers of Lies (OC#1)	Sofia University	Dataset
UCI and OpenML Data Sets for Ordinal Quantification	CNR	Dataset
Varia Research - SaaS application for efficient online research (OC#1)	Varia UG	other
VISIONE Feature Repository for VBS: Multi-Modal Features and Detected Objects from MVK Dataset	CNR	Dataset
VISIONE Feature Repository for VBS: Multi-Modal Features and Detected Objects from V3C1+V3C2 Dataset	CNR	Dataset
VISIONE Feature Repository for VBS: Multi-Modal Features and Detected Objects from VBSLHE Dataset	CNR	Dataset





Name	Contributor	Asset Type
VolEvol - Generation of Meaningful Representations of Volume Data Through Evolutionary Learning (OC#2)	“Gheorghe Asachi” Technical University of Iași	Software
VWFP: Virtual World Fallen People Dataset for Visual Fallen People Detection	CNR	Dataset

Table 8: List of AI assets in Zenodo contributed by AI4Media (titles are linked to assets in Zenodo¹¹¹)

¹¹¹ All links were last visited 27/08/2024





11 Appendix 3: Single models in AI-Builder Marketplace

The following single models were contributed by AI4Media to AI-Builder Marketplace¹¹²:

Model Name	Model type
aggregator-statements (Knowledge Graph Training for Mindbugs Discovery)	AI
AudioDialogCreator	AI
AudioPunctuationGerman	AI
AudioSegmentation	AI
AudioSpeakerRecognition	AI
AudioSpeechToTextGerman	AI
databroker-statements	Connector
detr-objectdetection-broker	Connector
detr-objectdetection-model	AI
detr-objectdetection-tensorboard	AI
EntityRecognizer 1.0.0	AI
EntityRecognizer 1.0.1	AI
EntityRecognizer 1.0.2	AI
FileUploadDataBroker	Connector
file-viewer	Connector
kg-component (Statement analyzer for Mindbugs Discovery)	AI
MusicDetection	AI
ner-databroker	Connector
ner-model	AI
Object Detection 1.0.0	AI
Object Detection 1.0.1	AI
Object Detection 1.0.2	AI
ObjectDetectionGPU	AI
recognaize-ocr	AI
recognaize-preprocessing	AI
recognaize-segmentation	AI
recognaize-ui	Connector
SpeechRecognition	AI
SpeechRecognitionWebUI	Connector
Text2ImageSearch	AI
VideoActionRecognition	AI
VideoObjectRecognition	AI
VideoShotDetection	AI
VideoShotDetectionGPU	AI

¹¹² <https://aiexp.ai4europe.eu/#/marketPlace>, last visited 27/08/2024





VisualFeatureExtraction	AI
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Table 9: List of single models in AI-Builder Marketplace contributed by AI4Media (titles are linked to models in marketplace¹¹³)

The following single models published in AI-Builder Marketplace¹¹⁴ can also be considered suitable for use in experiments and demonstrators in the project's field of application¹¹⁵. Unfortunately, it was not possible in all cases to find out through which project the model was contributed.

Model Name	Model type	contributing Project
AIA-obfuscation	AI	?
AudioFileBroker	connector	AI4EU
audio-file-broker	connector	AI Regio
Augmented data registry	AI	?
Coverageanalysis	AI	AI4EU
Entity extractor	AI	?
FaceAI	AI	AI4EU
forWoT	AI	AI4EU
Idiap BEAT Databroker - M-NIST	dataset	AI4EU
Idiap BEAT Face Recognition - Eigenfaces trained on ATNT	AI	AI4EU
Idiap BEAT Face Recognition - FaceNET	AI	AI4EU
Idiap BEAT Handwritten Digit Recognition - Multiclass Logistic Regressor trained on M-NIST	AI	AI4EU
pira-analyzer	AI	?
reedee	AI	?
sentiment-analysis-databroker	connector	AI4Europe
sentiment-analysis-model	AI	AI4Europe
SharedFolderProvider	connector	AI4EU
speech2text-en	AI	AI4Regio
SwabAI	AI	AI4EU
Tag-my-outfit	AI	AI4Europe
Tensorboard	connector	AI4Europe
viume-pic2text	AI	?
YoloV5	AI	AI4EU

Table 10: List of single models in AI-Builder Marketplace provided by other projects and considered suitable for use in AI4Media (titles are linked to models in the marketplace¹¹⁶)

¹¹³ All links were last visited 27/08/2024

¹¹⁴ <https://aiexp.ai4europe.eu/#/marketPlace>, last visited 27/08/2024

¹¹⁵ as of 27/08/2024

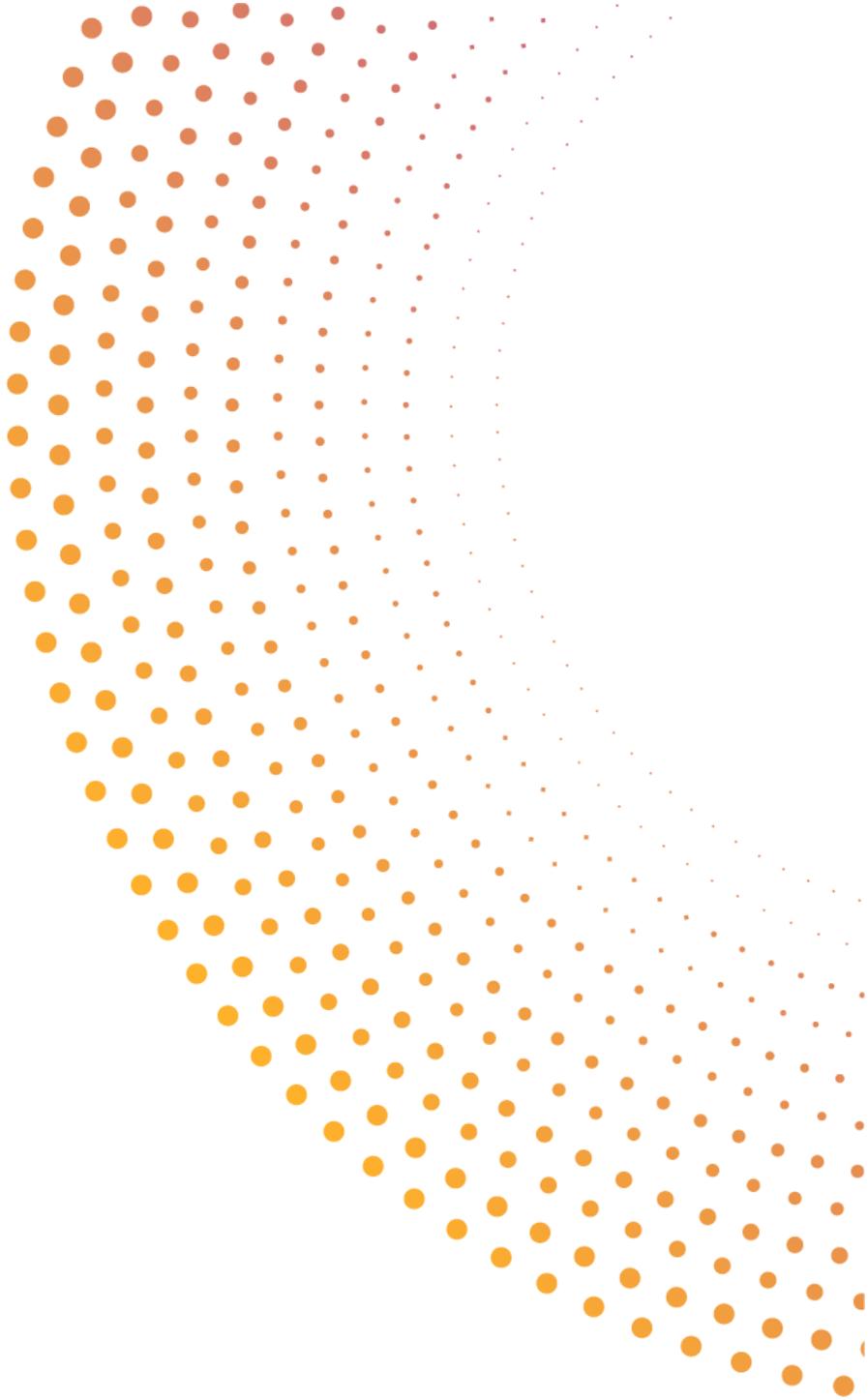
¹¹⁶ All links were last visited 27/08/2024





AI4media

ARTIFICIAL INTELLIGENCE FOR
THE MEDIA AND SOCIETY



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