



fRamework for safE, opEn, collaboratiVe And inclUsive digitisAtion and management of cultural heritagE

Grant Agreement No 101132389

INTERNAL DELIVERABLE 3.2:

AI-driven rapid inspiration visualiser

Work Package 3

LEAD BENEFICIARY:

FROMSCRATCH DESIGN STUDIO BV (FS)

Delivery Date: 26/04/2025

Document Sheet

Project acronym	REEVALUATE
Project full title	Framework for safe, open, collaborative and inclusive digitization and management of cultural heritage
Programme	Horizon Europe
Topic	HORIZON-CL2-2023-HERITAGE-01-03
Type of Action	HORIZON-Research and Innovation Actions
Grant Agreement	101132389
Start day	1 January 2024
Duration	36 months

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Document Information

Deliverable number	D3.2
Deliverable name	AI-driven rapid inspiration visualiser
Lead beneficiary	FromScratch Design Studio B.V.
WP	3
Related task(s)	3.2
Type	Other
Reviewers (Organisation)	KUL, FOKUS
Delivery date	30/04/2025
Main author(s)	FS
Contributor(s)	Fraunhofer FOKUS, KUL

Publishable summary

The **REEVALUATE project** focuses on advancing AI-driven creative reuse in the cultural heritage domain. One of its key components is the **AI-Driven Creative Reuse Enabler**, which powers the **Fashion Time Machine** pilot and contributes to the functionality of the **Marketplace platform**. This enabler utilizes **Denosing Diffusion Probabilistic Models** to generate high-quality, domain-specific images, supporting the reuse and repurposing of content in a creative and efficient manner, both for fashion and other cultural heritage assets. Essentially, it allows users to create new variations of existing artifacts by supplying a reference image along with a textual prompt that includes modification instructions.

Designing such an enabler required addressing several challenges, particularly in the area of fashion image generation, as state-of-the-art models do not perform well enough in this domain and frequently generate cropped images with noisy backgrounds compromising artifact reusability. To address this issue, fine-tuning the model with appropriately annotated data is deemed necessary. However, no such data were available for use. To overcome this, a new annotation pipeline was created, resulting in the development of a domain adapted dataset that enabled the models to generate relevant and high-quality output, despite initial data limitations.

The process of training the models involved effort in managing and comparing various experiments to optimize performance and output quality. Both **Stable Diffusion 3** and **Kandinsky 2.2** models were fine-tuned to better address the specific needs of the project. Additionally, given the resource demands of these models, the system architecture was carefully designed to balance computational efficiency with the requirements of high-performance image generation, ensuring accessibility for both the **Marketplace** and the **Fashion Time Machine pilot**.

The final system provides a practical solution for generating cultural heritage and fashion-related content using AI, addressing some of the challenges associated with deploying resource-intensive models in real-world applications. The **REEVALUATE project** aims to contribute to the ongoing exploration of AI-powered content creation and reuse, with potential applications extending beyond fashion and cultural heritage to other creative industries.