

Expression of Interest

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Expertise: Creative coding environments, AI-assisted programming, multimodal interaction, software engineering, human-computer interaction, end-user programming

Interested in : **HORIZON-CL2-2026-01-HERITAGE-01** “Artistic intelligence” : harnessing the power of the arts to address complex challenges, enhance soft skills and boost innovation and competitiveness

Expertise and Contribution to the Call

I design and build programming environments that support creative practice. I am particularly interested in visual/audio artists and digital makers who use code as a medium. My research sits at the intersection of software engineering, human-computer interaction, and artificial intelligence, with a particular focus on how programming tools and workflows can be made more expressive, legible, and mouldable for diverse users.

A central insight driving my work is that the challenge for creative developers today is no longer producing code. AI tools have made that far more accessible, but understanding, navigating, and reshaping code to serve genuine artistic intent. Current programming environments and languages were not designed with this challenge in mind, nor do they account for the diversity of people who now use code as a creative medium, including differences in gender, neurodivergence, and technical background.

A key dimension of my research is to explore the role of multimodality in transforming how programming activities take place. I investigate how emerging technologies (including ubiquitous XR, spatial computing, VLMs, LLMs, speech interaction, and virtual reality) can open new opportunities for interacting with code. Rather than treating programming as a text-bound, screen-based activity, my work asks how spatial, embodied, and conversational modalities can reshape the programming experience for creative practitioners.

This expertise aligns directly with the call's Focus 2 priorities by:

- Developing low-TRL pilot demonstrators of AI-augmented and multimodal programming environments that enable artists and creatives to engage with emerging technologies without requiring deep technical expertise.
- Investigating how immersive and spatial computing paradigms (XR, VR, spatial interfaces) can make code more tangible, navigable, and expressive. Transforming programming from a text-editing task into an embodied, creative activity.
- Leveraging VLMs and LLMs alongside speech and gesture to create interfaces where artists can describe, query, and modify their code through natural language and visual means, dramatically lowering the barrier to creative ownership of code.
- Addressing the diversity gap in programming tools — designing environments that take into account gender, neurodivergence, and varying technical backgrounds,

moving beyond the assumptions embedded in tools designed for professional software engineers.

My approach centres on prototype and tool development, grounded in empirical observation.

Possible Roles within the Consortium

I can lead a work package focused on the design, development, and piloting of inclusive, multimodal, AI-enhanced creative coding environments. This work package would sit at the technical aspect, producing pilot prototypes (mostly focused under Focus 2).

Concretely, I can contribute to or lead activities including:

- Designing and building pilot programming environments that integrate AI (LLMs, VLMs) for code comprehension, transformation, and navigation. Tailored to the workflows and needs of artists and creative professionals.
- Developing multimodal interaction paradigms for programming: speech-based code querying, XR-based code visualisation and manipulation, and spatial computing interfaces that make code structures visible and tangible in three dimensions.
- Exploring how virtual and immersive environments can serve as programming workspaces: enabling artists to inhabit, inspect, and reshape their creative code in ways that go beyond the conventional IDE.
- Developing inclusive design frameworks that evaluate and guide the accessibility and usability of programming tools across diverse user groups.

Fit with the Call

This call frames 'artistic intelligence' as a driver of innovation and competitiveness in Europe. My work makes a foundational contribution to that agenda by reimagining the programming environment itself; medium through which digital and computational art is made.

The shift to multimodal, spatially-aware, and AI-augmented programming environments is not merely a technical upgrade. It represents a qualitative transformation in who can meaningfully participate in creative coding, and what creative coding can become. By combining expertise in software engineering, AI, and human-computer interaction, I can support the interdisciplinary technical depth that Focus 2's pilot demonstrator requires.

I am seeking consortium partners and would welcome conversation with coordinators working at the intersection of arts, emerging technologies, and creative practice.