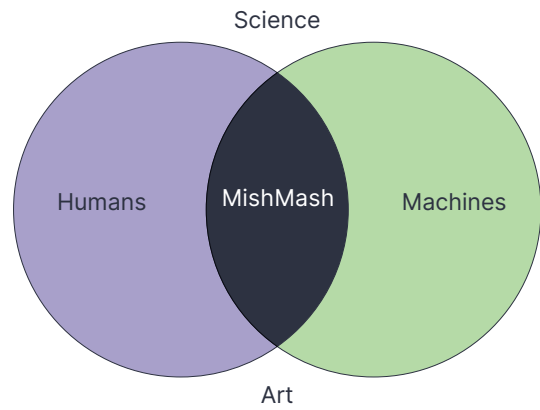


## MishMash – Centre for AI & Creativity

### 1 Excellence

#### 1.1 State of the art, knowledge needs and objectives

There is currently a confusing mixture—a *mishmash*—of notions and opinions about AI’s potentials and risks within the academic world, creative industries, cultural institutions, and society at large. We propose a centre to study AI from the perspective of the fundamental human trait of **creativity**, understood here as the ability to form novel and meaningful ideas or works (Boden 2004).



Human creativity has both shaped and been shaped by technological developments. Today, human creativity faces unprecedented challenges and opportunities brought by **Creative AI**, understood here as machine systems that can produce novel and meaningful results that stand independently (de Vries 2020). This raises several important questions: to what extent are Creative AI systems genuinely creative, how do they differ from human creativity, and how can humans and machines be co-creative? Furthermore, what are the societal implications of Creative AI, how will producers’ and consumers’ attitudes towards AI-generated creative content develop, and how can creative approaches to AI have an impact beyond the cultural and creative sectors?

We view **artistic exploration** as a pivotal entry point for engaging in critical discussions about AI and its implications for human-machine interaction and society at large. Artistic research has been integral to computer-based AI development since the early days of computer science (Colton and Wiggins 2012), exemplified by early rule-based systems for music composition (Miranda 2021) and painting (Cohen 1995). Today, generative systems can produce all sorts of artistic products, and several have become popular commercial products, such as Dall-E (images), ChatGPT (text), and Suno.ai (music). MishMash aims to expand current knowledge and pioneer new **CoCreative AI systems** that allow partnerships between humans and machines (Anscomb 2024). Researchers and practitioners from creative disciplines are uniquely positioned to develop AI-based technologies and to do so responsibly, reflecting on their ethical challenges and potential drawbacks.

There are many possibilities with Creative and CoCreative AI systems but also numerous challenges and knowledge needs (see details in WP descriptions in section 1.2):

**Challenge 1:** How can we design and implement real-time AI systems for immersive, dynamic, and ethical human-machine collaborations in artistic performances?

**Challenge 2:** How can artists integrate AI into their creative processes while maintaining control and addressing biases, cultural implications, and environmental impact?

**Challenge 3:** How can AI-generated content and Creative AI systems impact health and well-being and be integrated into therapeutic practices while considering empathy, consent, and equity?

**Challenge 4:** How can Creative AI be integrated into education to enhance learning and foster AI literacy while considering diversity, justice, inclusion and well-being?

**Challenge 5:** How can AI enhance innovation in the creative and cultural industries while addressing copyright, rights management, ethical challenges, sustainability, and equitable revenue distribution?

**Challenge 6:** How can AI enhance the preservation, accessibility, and representation of cultural heritage in archives, libraries, and museums while ensuring ethical and legal compliance?

**Challenge 7:** How can Creative AI enhance human agency, control, and expression in problem-solving while adhering to physical, legal, and societal constraints during the creative process?

**Primary Objective:** MishMash will create, explore, and reflect on AI for, through, and in creative practices.

MishMash will bring together a large multidisciplinary and cross-sectorial group of researchers and practitioners from the arts, humanities, social and natural sciences, design, and engineering. The centre will build on the combined expertise of one Centre of Excellence (RITMO) and three Centres of Excellence in Education (CreaTeME, CEMPE, CEFIMA). Together, we will work towards these secondary objectives to meet the requested AI Centre goals:

**Secondary Objective A:** Establish a national centre comprising 16 higher education institutions, 4 research institutes, and 3 artistic research centres, teamed up with the National Library, Norwegian Broadcasting Corporation (NRK), the National Museum, and several other museums, industry partners, and international partners. The centre will be a lively, virtual research environment, with weekly online meetings, biweekly work package (WP) check-ins, monthly thematic seminars, regular public workshops and life-long learning events, and bi-annual symposia with lectures, performances, and exhibitions.

**Secondary Objective B:** Generate new fundamental knowledge about AI and develop innovative AI-based algorithms and tools to make them applicable in creative practices. The tools will be used in public performances and exhibitions, in educational and therapeutic settings, within creative industries, and for cultural heritage. Critical reflections on diversity, privacy, copyright, and sustainability will feed into an iterative development cycle and be the subject of academic publications and policy guidelines.

**Secondary Objective C:** Build expertise in Norway through research projects involving around 100 faculty members interested in Creative AI. They will be central in educating dozens of PhD candidates and hundreds of students and providing lifelong learning opportunities for freelancers and professionals in the public and private sectors. This will significantly enhance the Creative AI capacity in research environments, meet qualified labour needs, and provide the basis for innovation within the creative sectors.

**Secondary Objective D:** Collaborate with leading research environments worldwide by hiring adjunct professors and facilitating two-way mobility of early career researchers. This will enhance the internationalisation of Norwegian AI research, education, and innovation.

**Secondary Objective E:** Develop methods and strategies for cross-, multi-, and interdisciplinary collaboration between typically disparate disciplines. MishMash will be the first centre at this scale in Norway to span academic disciplines from the “soft” to the “hard”, between art and science, and with close collaborations with both the public and private sectors.

As showcased by the comprehensive involvement from individuals, institutions, and businesses in Norway, a national *Centre for AI & Creativity* is both wanted and necessary. According to the World Economic Forum’s *Future of Jobs Report*, creativity is anticipated to be an essential skill for the future workforce, alongside analytical thinking and problem-solving. In a recent government white paper (*Meld. St. 9 (2024–2025)*), section 6.4 emphasises the importance of arts and culture in ensuring the readiness of a citizenry in times of crisis.

## 1.2 Research questions and hypotheses, theoretical approach and methodology

**Research Question:** What are the possibilities, limitations, and transformative effects of AI on creative practices, and how can we develop CoCreative AI systems that complement human creativity while addressing ethical, cultural, and societal implications?

Tackling such a complex question requires a multifaceted and *truly interdisciplinary* research approach. MishMash organises its theoretical and methodological “mishmash” into a structured “mesh,” where projects and activities intersect across *themes, approaches, and perspectives* (see Figure 2). The WPs (detailed below) are designed around seven core *themes*, addressing the challenges outlined in the previous section. While some WPs focus on leveraging AI in creative—primarily artistic—applications, others explore the innovative use of AI in adjacent domains, fostering a dynamic interplay between art, science, and society. The work will be conducted by combining a multitude of scientific and arts-based theories and methods, which can be summarised in three interconnected *research approaches*:

**CREATE:** making AI-based systems, tools, artworks, and related frameworks and policies. This includes theories and methods from computer science, engineering, and various types of art and design, emphasising creating CoCreative AI systems that prioritise human agency, environmental sustainability, and democratisation of AI technologies.

**EXPLORE:** using AI-based systems in creative practice and seeing how creative methods can be applied in other domains. This includes investigating how AI can enhance creativity, foster innovation, and support learning and well-being using theories and methods from psychology, therapy, educational sciences, and cultural heritage.

**REFLECT:** critically studying and discussing the impacts of AI on humans, human creativity, various cultures, and society at large. This includes theories and methods from the humanities and social sciences to ensure responsible AI development and use.

MishMash’s core strength lies in its diverse team of researchers and partners, anchored within the future-conscious values of Norwegian society and culture. We utilize Work Package (WP) descriptions to outline the scope, aims, and approaches of the various interdisciplinary projects enabled by this unique collaboration. Each WP will include researchers from multiple higher education institutions, each bringing different methodological expertise. They will work alongside non-academic partners, many of whom are key stakeholders. The WPs will not be siloed; we foresee much collaboration following interconnections in the cube model outlined in Figure 2. This will be achieved through cross-WP meetings and workshops based on the three *perspectives* (machines, humans, and society). These perspectives will inspire and support theoretical contributions to fundamental AI development (see Section 2).

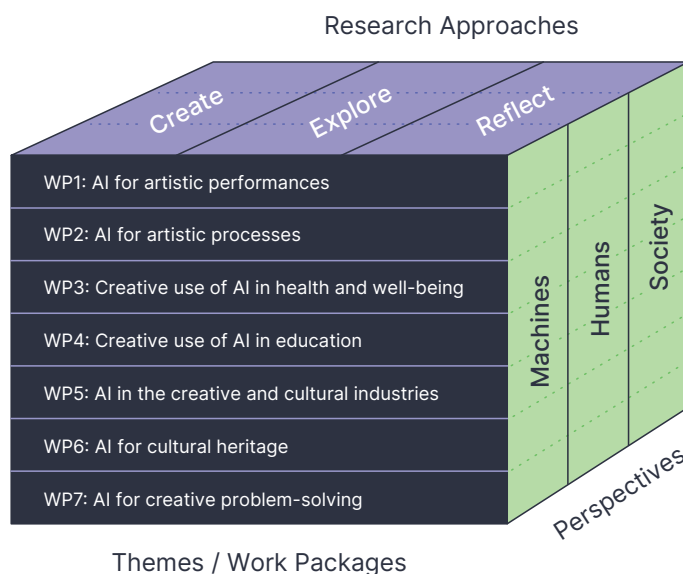


Figure 2: The MishMash “cube” shows intersections of themes, approaches, and perspectives.

### WP1: AI for artistic performances

WP Leaders: Kyrre Glette, UiO / Morten Qvenild, NMH / Georgios Marentakis, HIØ

This WP focuses on how real-time interaction with AI systems transforms the creative process in applications such as music and art performance, interactive installations, and gaming. We will emphasise AI systems that facilitate continuous interactions between humans and machine agents (Dahlstedt 2021), especially multiple and embodied AI agents (Martin et al. 2020). Countering the current trends of very large models with hard-to-control outputs, we will focus on balancing data-based approaches with artists’ knowledge and search-based methods (Jónsson, Erdem, and Glette 2024) to achieve personalised and novel outputs. In contrast to WP2 (see below), the emphasis is on supporting live, dynamic, and interactive performance rather than creating a fixed final creative product (Erdem et al. 2022). Our use cases require synchronous, rich, continuous feedback that unfolds naturally and does not obstruct performance during real-time co-creative improvisation and collaboration (McCormack et al. 2020). Designing AI systems that can provide and interpret such feedback requires a broader understanding of what must be “explainable” (Bryan-Kinns et al. 2024) when interacting with AI during creative performance. We posit that embodied AI systems that can sense, act, and behave in a way that is intuitively understood by humans offer unexplored opportunities for spontaneous co-creation in artistic performance and exploration that reach far beyond the current state of the art.

**RQ1.1:** How can we design real-time multi-agent and embodied AI systems with rich dynamics to enable immersive and expressive interfaces and interactions?

**RQ1.2:** How can we integrate and balance data-, knowledge-, and search-based approaches to achieve personalised and enhanced expressive control, and how can the system’s autonomy be adapted to the allocation of control between the human and the machine?

**RQ1.3:** Which multimodal data are required to determine continuously changing human emotions, and how can we interpret them algorithmically to emulate human empathy during performance?

**RQ1.4:** How can we map the cybernetic, aesthetic, and ethical implications of human-machine relationships and explore a system’s creative potential?

**CREATE** new AI algorithms, open-source software and hardware, and human-machine interaction methods for real-time artistic applications that offer ethical and inclusive technologies for diverse artistic use.

**EXPLORE** existing and custom-built interactive AI-based software and hardware solutions in real-world settings, such as concerts, installations, and gaming.

**REFLECT** on current challenges and barriers to artistic real-time applications of AI to inform the creation of new algorithms and systems.

## WP2: AI in artistic processes

WP Leaders: Budhaditya Chattopadhyay, UiB / Sashi Komandur, INN / Synne Bull, Kristiania

This WP focuses on AI systems used in producing works associated with the arts and creative industries, including visual arts, film, VR/XR, literature, performing arts, games, and music. Prompt-based, machine-learning systems are becoming normalised in many workflows, and practitioners and professionals are increasingly aware of their benefits and costs. Concerns include the effects of “outsourcing” creative work and decision-making to AI systems and the hegemonic cultural biases present in many commercial tools (Vinchon et al. 2023). Creativity shapes how communities see themselves and imagine new possibilities. When AI systems reinforce dominant cultural patterns and marginalised alternative perspectives, they risk narrowing public discourse, diminishing cultural diversity, and strengthening existing norms at the expense of exploration and innovation (Vallor 2024). This raises critical questions about cultural agency: Who decides what stories are told, what images are seen, and what ideas shape our shared reality? This WP will explore new challenges in the creative process, challenging the concept of “neutrality” in AI systems and examining embedded biases. The goal is to ensure that creative tools contribute to more inclusive, diverse, and democratic cultural futures, balancing artistic control with machine dominance to preserve human aesthetic and artistic integrity.

- RQ2.1:** How can artists integrate generative AI systems into their ideation and production processes while maintaining creative autonomy and avoiding the risk of machine-driven homogenisation?
- RQ2.2:** What are cultural and ethical implications for artists and audiences when AI systems integrate into creative processes, and how can these be addressed to ensure diversity and originality?
- RQ2.3:** How can artists and creative producers employ generative AI tools to push the boundaries of artistic expression while critically engaging with the biases embedded in these systems?
- RQ2.4:** How can artistic exploration help expose limitations of current AI technologies and inspire the development of more inclusive, artist-centred tools that foster innovation and human agency?

**CREATE** new AI-based artistic productions and tools that prioritise artist-centred workflows, enabling creative control and innovation across diverse fields.

**EXPLORE** existing AI tools to identify their potentials, limitations, and challenges, focusing on ethical and legal implications and cultural biases.

**REFLECT** on how the interplay between AI and human creativity exposes new insights into the act of creation, its impact on audiences, and the social impact of art on contemporary society.

## WP3: Creative use of AI for health and well-being

WP Leaders: Claire Ghatti, UiB / Andreas Bergsland, NTNU / Jonna Vuoskoski, UiO

This WP investigates how AI-generated creative content (images, music, literature, media, etc.) impacts human health and well-being. It also examines the use of AI in creative arts therapies to promote mental health and physical well-being and how novel health research methods involving AI can enable new knowledge generation. Engaging in creative processes can promote health and well-being (Fancourt and Finn 2019). AI tools offer opportunities for augmenting human creativity, yet their use also raises concerns about the potential devaluation of human qualities like empathy and autonomy (Abadi et al. 2023). We will explore how AI can both support and create challenges for well-being, creativity, and emotional expression. Ethical considerations are central to this WP, especially how AI can be used responsibly to avoid reinforcing inequalities or biases. Our approach emphasises anti-oppressive practices and seeks to support historically marginalised groups through inclusive AI applications in the arts. Collaboration with users and stakeholders is key to creating innovative solutions while ensuring health-promoting AI interventions are relevant and ethically sound. Critical disability perspectives are incorporated to ensure that AI systems in arts for health are inclusive and accessible for all.

- RQ3.1:** How do humans perceive, experience and relate to AI-generated creative content?
- RQ3.2:** How can Creative AI systems enhance emotional well-being and facilitate therapeutic outcomes?
- RQ3.3:** What can AI offer research in mental and physical health that incorporates the creative arts?
- RQ3.4:** How are aspects of consent, equity and justice safeguarded when AI is integrated into creative processes in health contexts?

**CREATE** reflexive and user-informed “failsafe” frameworks and guidelines for disability-inclusive integration of AI into the arts for health and well-being.  
**EXPLORE** how AI-generated content and interactive AI systems affect human behaviour and emotions.  
**REFLECT** on the benefits and risks to human health and well-being of integrating AI into creative processes.

#### **WP4: Creative use of AI in education**

WP Leaders: Hilde Norbakken, UiA / Sidsel Karlsen, NMH / Fredrik Graver, INN

The rapid inclusion of AI into education presents transformative opportunities and challenges for teaching and learning alongside significant pedagogical, ethical and practical issues (Bozkurt et al. 2024). This WP explores how education can harness AI to enhance learning opportunities, foster creativity, and support critical thinking and AI literacy (Long and Magerko 2020). The educational sector is currently characterised by numerous local initiatives to adopt commercial AI tools. However, high-quality, open education resources—especially on Creative AI—are scarce, with hardly any available in Norwegian. There is a clear need for a unified effort to advance AI literacy in Norwegian schools and enhance the understanding and application of Creative AI in higher education and lifelong learning. The aim is to equip future practitioners and educators with the competence to navigate AI’s complexities while providing current educators with resources to minimise a generational gap in AI literacy. WP4 will collaborate closely with researchers from other WPs to incorporate insights from ongoing research into educational programs and curricula and to influence technological developments from an educational point of view.

**RQ4.1:** How can Creative AI be effectively integrated to enhance teaching and learning and foster human creativity?  
**RQ4.2:** How can the artistic use of AI within creative and fine arts education challenge and develop hierarchies of knowledge production in education and research?  
**RQ4.3:** What measures can ensure that ethical considerations such as diversity, justice, fairness, inclusion, privacy, trust, and accessibility are central to implementing AI in creative education?  
**RQ4.4:** How can the relationship between AI in formalised education and the application of AI in broader artistic practice be mapped and analysed to advance the use of Creative AI?

**CREATE** educational material, models and methods for broad applications through artistic and pedagogical practices with AI, emphasising ethical issues related to diversity, justice, fairness, inclusion, privacy, trust and accessibility.  
**EXPLORE** the artistic and pedagogical use of AI in formal, non-formal and informal learning contexts, including developing a shared understanding of AI literacy for creative and fine arts education.  
**REFLECT** on the implications of using AI in education to suggest frameworks and policy recommendations for using AI in education.

#### **WP5: AI in the Creative and Cultural Industries**

WPLs: Ragnhild Brøvig, UiO / Irina Eidsvold-Tøien, BI / Jon Marius Aareskjold-Drecker, UiT

Technological innovation has consistently disrupted creative industries’ business models, revenue streams, and legal frameworks. These disruptions have intensified with the rise of digital platforms, streaming services, and AI technologies (Geiger and Iaia 2024). AI’s ability to generate cultural content brings new opportunities and significant legal and ethical concerns. Key issues include copyright, moral rights, and the ethics of training AI on human artists’ work, voices, and other bodily expressions without proper agreements (Blitz 2018). Furthermore, the vast amount of AI-generated content challenges existing revenue-sharing models, requiring a rethinking of traditional frameworks. However, AI can also offer innovative solutions, such as AI-driven identification systems for rights management. Such systems could help harmonise and complete international databases for ownership and metadata, enhancing transparency and efficiency. AI could also facilitate more equitable distribution of royalties across different regions and sectors. This WP is dedicated to exploring both the challenges and solutions that AI presents to the legal and structural dynamics of the creative industries by investigating current practices. It also aims to connect this awareness to the research and development carried out throughout the MishMash network and to disseminate knowledge, ethical and legal guidelines, and

newly developed tools to various stakeholders. As part of this effort, Norinnova, a technology transfer office located in Tromsø, will contribute to identifying and commercialising new tools and solutions developed under the MishMash umbrella. Researchers from NORSUS, the Norwegian Institute for Sustainability Research, will write a Life Cycle Assessment (LCA) report to address the environmental impact of new Creative AIs. Furthermore, legal scholars involved in MishMash will share guidelines with legal stakeholders.

**RQ5.1:** How does training AI systems on existing artistic expressions and recorded voices raise issues related to privacy, copyright, human rights, private law, and contract law, and what regulatory frameworks are needed to address these legal challenges and guide policy-making?

**RQ5.2:** What are ethical, environmental, privacy, and safety considerations when training AI models on large datasets for artistic applications, and what strategies can mitigate these concerns effectively?

**RQ5.3:** How do AI technologies affect the structures of the creative industries, and what business models and regulatory frameworks are needed to accommodate these changes while securing sustained development of ethical practices and human creativity?

**RQ5.4:** What role can AI play in developing global databases for rights management and ensuring comprehensive and accurate ownership records in the creative industries?

**CREATE** academic and cultural awareness through publications and dissemination about the current and future states of affairs, robust infrastructures for data management, recommendations for sustainable business models, and appropriate legislation for handling emerging AI-generated content.

**EXPLORE** AI's impact on artists' rights and positions within the cultural industries and develop strategies to balance the economic benefits of AI integration with the need to maintain job opportunities.

**REFLECT** on how to maintain and develop culturally and economically sustainable business models, regulatory frameworks, and political strategies to address AI-related challenges.

#### **WP6: AI for cultural heritage**

WPLs: Ingrid Romarheim Haugen, NB / Arnulf Mattes, UiB / Olivier Lartillot, UiO

Archives, libraries, and museums (the "ABM sector" in Norway) are central institutions for preserving, sharing, and communicating human culture. The National Library of Norway is distinguished by its extensive collection of high-quality digital resources and the advanced Digital Humanities Lab. It is essential to integrate all these resources and numerous local collections in Norway into a cohesive digital framework and further connect them to the European Cultural Heritage Cloud. This necessitates automated, intelligent curation of the vast collections. One focus will be on music, leveraging the cutting-edge computational musicology research at UiO in collaboration with the National Library. We will pioneer hybrid AI models by blending machine learning with musicology and cognition-based symbolic AI (Lartillot et al. 2022). Particular attention will be dedicated to minority cultural expressions, including Norwegian folk music, Sámi joik and world chant cultures. We aim to create models for creating, curating, and analysing comprehensive catalogues transferable to other contexts and cultural heritage areas. The public sector must lead in these technologies, ensuring that powerful new capabilities are used ethically and inclusively (Huang et al. 2023). This approach seeks to empower institutions, artists, and the public to leverage archives, exploring the influence of past cultural expressions on contemporary creativity while promoting respectful citation and avoiding plagiarism.

**RQ6.1:** How can we significantly advance AI to effectively discover, organise, and showcase the vast richness of cultural heritage and creative works in all forms?

**RQ6.2:** How can AI technologies be used ethically and inclusively to protect and nurture minority cultural expressions while considering AI's broader impact on cultural practices?

**RQ6.3:** How can we advance AI research to enable national institutions to effectively guard against the risks of unchecked and exploitative AI use in cultural heritage?

**RQ6.4:** How can we develop interlinking systems within cultural heritage and creative works to enhance rights management and highlight their profound impact on contemporary creativity?

**CREATE** innovative AI technologies to automatically transcribe, analyse, classify, interconnect, and showcase vast, unstructured multimedia datasets, highlighting the richness of creative works.

**EXPLORE** the effectiveness of current and custom AI systems in preserving and nurturing Norwegian cultural expressions, focusing on minority cultures.

**REFLECT** on the ethical and legal threats of AI usage in cultural heritage and develop policies and guidelines to ensure responsive, ethical and inclusive use of AI.

#### **WP7: Human-centric AI for Creative Problem-Solving**

WPLs: Carsten Griwodz, UiO / Baltasar Beferull, SimulaMet / Kjetil Nordby, AHO

This WP explores how a person or group can use Creative AI for task-specific problem-solving. The tasks considered in this WP range from industrial design, where artistic methods are integral to design processes, to emergency rescue scenarios, where imminent problems must be solved by creatively using available resources. We target creative goal-based practitioners, including professionals as diverse as designers, filmmakers, human operators in industrial settings, and emergency service personnel, and we adopt the principles and ideas of Creative AI that MishMash co-creates through its three perspectives. To achieve this in a goal-driven context, new frameworks must be developed that give creators freedom, surprise, control, and inspiration and allow them to evaluate, select, discard, and apply AI's contributions. The creative process must be interactive, ranging from iterative prompt-based exploration (Lawton et al. 2023) to real-time collaboration with an embodied AI (Paradise et al. 2023). The process should support creators in addressing their professions' requirements and other practical challenges, finding pragmatic solutions instead of circumventing them. A key challenge here is potential conflicts between artistic freedom and the practical requirements that the creator must fulfil. AIs developed in this WP will be limited by stricter boundaries than others—from the laws of physics to legal frameworks, such as realism constraints (Duan et al. 2022). We will go beyond informed AI approaches in our focus on encoding these limitations into the development principles for Creative AIs. WP7 will generate new knowledge of algorithmic, personal and societal challenges when applying Creative AI in creative practices in collaboration with other WPs facilitated by MishMash's cross-cutting perspectives.

**RQ7.1:** How can we integrate Creative AI in creative problem-solving processes to maintain and develop human agency, control and personal expressive capabilities?

**RQ7.2:** How can we use algorithmically emulated empathy to achieve a greater sense of human agency and empowerment for humans?

**RQ7.3:** How can interfaces for AI and AI-supported services be designed to enhance user experience and transparency, making co-creative processes more accessible?

**RQ7.4:** To what extent can we personalise and customise Creative AI systems that extend to a wide range of applications and contexts, allowing the definition of generic frameworks?

**CREATE** AI algorithms that can empower human creativity in pursuing tasks with external goals while remaining within (learned) bounds regarding physical, legal, emotional, social and other constraints.

**EXPLORE** how Creative AI algorithms can empower humans while ensuring their sense of agency and ownership by observing, understanding, and adapting to human expression.

**REFLECT** about the perception of creativity in problem-solving, ranging from the ability of an AI system to separate recreation from creativity, the creator's intent, to the perception of a user or an observer of the creation.

#### **Risk assessment**

Numerous risks are involved in this initiative, many of which stem from the large and diverse partner group. Cross-institutional collaboration is inherently challenging, and multidisciplinary cooperation can be difficult even within a single institution. Different epistemologies, theoretical foundations, and methodologies are potential areas of friction. **The WP structure is in itself a risk mitigation strategy.** Each WP is led by and includes researchers from various institutions and disciplines, ensuring broad participation and ownership among partners. Biweekly online WP meetings will help build a community among researchers who work on similar topics. Additionally, monthly perspectives seminars (machines, humans, society) will provide another level of interdisciplinary dialogue, allowing researchers to meet and discuss in different groups than the WPs.

Different working cultures and expectations may lead to inefficient collaboration in project teams. This will be mitigated by **critical reflection and meta-discussions** during joint meetings and during symposia to acknowledge potential problems upfront. Fortunately, all partnerships between academic and non-academic institutions are built on previous bilateral collaborations. While developing this proposal, we have experienced a genuinely positive and collaborative spirit. However, running such a large, complex centre requires careful leadership and organisational structures. We have, therefore, opted for a relatively large organisational “mesh-like” structure (see section 3) to allow everyone to thrive.

The WPs are associated with several risks. We anticipate numerous technical challenges, such as ensuring real-time, low-latency AI interactions. Fortunately, **development will focus on interconnected modules** and not be monolithic. Such a modular approach means that even if some parts encounter issues, progress can continue with others. Additionally, sharing resources and knowledge among partners is beneficial.

A significant risk is the ethical and cultural implications of integrating AI into creative processes, such as reinforcing existing biases or diminishing human creativity and artistic integrity. We aim to **create a safe experimental playground** within the centre, allowing for free exploration but also requiring multiple levels of reflection. Critical discussions will be central in perspectives seminars and during symposia. We will also engage the general public in debates connected to public performances and exhibitions.

Balancing copyright, data privacy, and security with the demand for large datasets in AI training is crucial; this necessitates **stringent data management protocols and compliance with legal standards**. Many partners already have strong procedures, and the Centre Manager has ample experience balancing “best versus good enough” procedures (Jensenius 2021).

The project also faces potential resistance from stakeholders in the creative and cultural sectors who may be sceptical about AI’s role. Therefore, **multidisciplinary and cross-sectorial collaboration** involving artists, researchers, and industry professionals is essential to foster acceptance, find common ground, address the challenges of new technologies, and co-create solutions. One of the Deputy Managers (Nordgård) has extensive experience working between sectors and running a Centre of Excellence in Education (CreaTeME) that works closely with industry. The other Deputy Manager (Jahr) is experienced in navigating between multiple artistic directions (literature, film, TV, gaming). By maintaining a reflective approach, MishMash will strive to anticipate and navigate potential risks, ensuring the responsible integration of AI into creative domains and maximising its societal benefits.

### **Stakeholder/user knowledge**

MishMash aims to push the frontier of fundamental understanding of AI and creativity while working hands-on with concrete use cases. Fortunately, we have a large team of partners who act as central stakeholders. They can roughly be divided into the following categories:

**Archives, libraries, and museums:** Norway’s “ABM” sector, with the National Library in front, is key to providing source material (data) and acting as a user-facing interface. This is of high value for MishMash researchers, who can help develop and explore AI-based systems to support information retrieval from currently underexplored parts of their collections (particularly media-rich datasets). These organisations are eager to use AI tools developed through MishMash in their operations.

**Creative industries:** Norway has a long history of (mostly) successful collaboration between creators, distributors, and lawmakers, making copyright issues potentially simpler than in many other jurisdictions. Partnering with key organisations gives MishMash a unique opportunity to innovate in the creative sectors while respecting legal frameworks.

**Freelancers/SMEs:** Many people working in creative domains—particularly artists—are freelancers or work in self-owned or small and medium-sized enterprises. Some are early adopters (and even developers) of new AI technologies, while others fear their craft becoming obsolete. MishMash aims to cater to these diverse needs by offering a residency program where creators and artists can spend time at one of the partner institutions and work closely with researchers. This will lead to hands-on exploration reflected through workshops, public showings of artistic results, and academic publications. Moreover, it will foster the co-creation of novel approaches by involving artists directly in research processes, strengthening the interaction between academia and other sector partners.

**Higher education and schools:** We aim to develop educational tools and practices that can be tested within our partners’ study programs and further adapted into resources for schools and life-long learning activ-

ities targeting teachers and professionals. This will be done with key educational stakeholders, including universities and national school networks. Synergies will be sought with other framework programs that fund educational innovation and prioritise digitalisation and technological advancements, such as Erasmus+ and Nordplus, to facilitate cross-sectoral educational collaboration.

**Other industries:** While the main stakeholders are from the creative sectors, MishMash aims to expand its impact beyond these fields. In particular, we see potential applications in other industries where industrial partners can benefit from our knowledge and tools (WP7). For more details, see Section 2.2.

### **Ethical perspectives**

Incorporating Responsible Research and Innovation (RRI) principles is fundamental to all MishMash activities, guided by the EU's *Ethics guidelines for trustworthy AI*. Within MishMash, we have researchers studying ethics from diverse disciplines, including philosophical, religious, legal, and phenomenological perspectives. We also have experts in psychology, therapy, and education who are experienced in addressing privacy and well-being concerns in their data collection processes. Additionally, creators and artists will contribute critical reflections on the ethical implications of AI through their practices, engaging directly with issues such as authorship, bias, and the commodification of creative work. We aim to ensure that ethical perspectives are interwoven throughout all WPs and centre-wide activities. Particular attention will be given to precarious labour conditions and societal responsibilities in the creative industries, where technological innovations may exacerbate inequalities if not handled responsibly. We will also ensure adherence to GDPR in all studies by following guidelines from the Norwegian Agency for Shared Services in Education and Research (Sikt), and we will share best practices between institutions to improve procedures and tools for responsible data handling. In addition to artist residencies, the Culture Moves Europe programme will help attract international AI artists, enriching our ethical discussions with diverse, global perspectives and field-specific experiences. Through these engagements, MishMash will continue to emphasise the ethical dimensions of AI research, particularly regarding how it impacts societal structures, cultural work, and human-machine relations.

### **Gender perspectives**

The historical male dominance in many existing creative works poses questions about the reproducibility of biases in learning-based systems. The same goes for the gender imbalance in the teams working on AI development. Fortunately, MishMash has a relatively good gender balance overall, although it is distributed unevenly between those working on AI development and those studying the effects of AI. Our multidisciplinary and cross-institutional WPs will help balance out this skewness, and the aim is to recruit and train a more balanced group of early career researchers and professionals.

### **Diversity perspectives**

Many current AI-based systems have a Western cultural bias and English language dominance. This will be a central topic of exploration in WP2–4 and guide the development of personalised and recommendation systems in WP1, WP6, and WP7. We will also focus on decolonisation through the strategic use of artist-in-residencies and a program for critical exchange with researchers and practitioners outside the Western hemisphere. The aim is to incorporate decolonised perspectives in the ongoing criticality of the centre as a whole (Sauvé et al. 2023), avoiding bias and preconceived notions of what constitutes a “common” knowledge base. The ability of AI-based research to provide new insight into connections between various cultures will allow for new perspectives on how human-cultural interaction crosses the lines of national identity, religion and cultural affiliation, allowing for greater cultural understanding among peoples, nations and religions.

### **Climate effects**

MishMash researchers typically work with media-rich datasets (such as audio and video) that require substantial storage space and consume significant processing resources, especially when scaled to many users. At the same time, our critical perspective on large-scale “universal” solutions will be backed up by developing and exploring efficient AI algorithms that can run on embedded platforms and work with smaller datasets. The environmental impact of AI in creative applications has been a common thread in our discussions leading up to this proposal. It will continue to be a recurring theme across the centre's activities and will be addressed in the Life Cycle Assessment NORSUS report as part of WP5.

### 1.3 Novelty and ambition

#### The potential for development of new knowledge beyond the current state of the art

MishMash aims to lead the development of both theoretical and practical frameworks that examine AI's impact on creativity, imagination, and the human mind. We will explore how AI can both enhance and constrain creative processes, offering fresh perspectives on human-machine collaboration. By contributing new models to the existing body of literature, MishMash will investigate ways AI can empower individuals while ensuring they maintain control over technological tools and narratives.

**Methodologically**, MishMash will develop innovative approaches to integrating AI into creative practices and explore how (co-)creativity can be applied across various domains. We will use existing AI systems (WP2–4) and prototype and test custom-built AI-based hardware and software systems (WP1, WP6, WP7). The effects of AI will be studied using a combination of qualitative (including introspection, observation, interviews, and questionnaires) and quantitative methods (such as motion capture, eye tracking, and physiological measurements). Each work package (WP) possesses multimethod competency and spans faculty boundaries, aiming to inspire diverse combinations of methods and approaches.

**Experimentally**, MishMash will push boundaries through collaboration between artists and scientists, researchers and students, and academics and non-academics. This includes real-time performances (concerts, multimedia shows, etc.) and non-real-time productions (music, image, film). Given our interest in AI-enhanced human-computer interaction, we are eager to explore interactive installations and virtual reality experiences. Showcasing and testing our methods in such settings should not be considered dissemination only. The integration of cultural and scientific knowledge using AI will have a major impact on a variety of fields in new, yet unforeseen ways. We will employ iterative design loops in which formal and informal evaluations will feed into new developments. The documentary material will also be crucial for researchers studying AI's effects on performers and perceivers.

**Empirically**, MishMash will gather a lot of data—quantitative and qualitative—about both human and machine behaviour. The ambition is to make as much of this as openly available as possible (see section on Reproducibility and potential reuse, p. 12). Collected data can be used to train models and support more personalised human-machine interactions. This is particularly powerful in real-time systems that can adapt to each person's ability through continuous learning and skill development. However, the development of such systems needs to be carefully assessed in terms of ethical and legal challenges.

#### Novel, original and ambitious aspects of the project

MishMash's composition is as novel as it is ambitious. The centre will be the first in Norway to establish long-term collaborations between scientific and artistic researchers and practitioners. In Norway, **art and science** are often separated organizationally. We aim to leverage the potential of creating, exploring, and reflecting on AI for, through, and in creative practices. In parallel—and in an iterative feedback loop—we want to harness the potential of artistic and creative approaches for other domains.

Throughout 2024, we organised numerous **Norwegian networking** workshops while developing this proposal. These workshops have successfully united people interested in AI and creativity *within* and *across* partner institutions. Researchers from nearly all Norwegian higher education institutions, alongside key public organisations and numerous private sector partners, have joined this proposal. This widespread participation underscores the need for a national network to foster closer collaboration, rather than competition, among peers interested in human creativity and AI.

We aim to create an experimental arena that facilitates collaboration between academic and non-academic members within the network. The **multidisciplinary composition** of the partner group ensures that we cover both “soft” and “hard” scientific approaches, spanning various branches of the arts and humanities, social and natural sciences, design, and engineering. This includes experts in educational sciences, psychology, computer science, and robotics. We also have researchers in music performance and production, sound design, film, TV, game development, visual arts, performance, literature, relational art, and industrial design. Creating a fruitful collaborative space for such a multitude of perspectives is novel and necessary to reach our goals. Including a wide array of artistic media ensures a discussion on how AI influences creativity and artistic expression, not just a function-driven development of specific AI tools in a particular genre of artistic production.

MishMash aims to be a centre for **true interdisciplinary collaboration**. That is easier said than done, and we know the pitfalls of projects with significant theoretical and methodological differences. The Centre Manager has extensive experience running interdisciplinary projects, including an interdisciplinary Centre of Excellence.

In a recent book, he describes different disciplinary integration steps, from intra- to cross-, multi-, inter-, and transdisciplinary (Jenseni 2022). In MishMash, we expect all these types of disciplinarity to run in parallel. Some researchers will support a project with their disciplinary expertise, others will engage in crossdisciplinary dialogue, and a few may inspire transdisciplinary integration. The key to success is allocating time to disciplinary meta-discussions and acknowledging differences and similarities between individuals and institutions.

## 2 Impact

### 2.1 Potential impact of the proposed research

MishMash will achieve all the **AI centre goals** listed in the call (elaborated on p. 2). In short, MishMash will (1) establish a national centre involving a comprehensive number of partners, sectors, and disciplines; (2) develop new AI-based algorithms tools and produce fundamental knowledge about AI through close dialogue between researchers, partners, and stakeholders; (3) build a strong network of faculty members, educate dozens of PhD candidates and provide lifelong learning opportunities for freelancers, educators and professionals in the public and private sectors; (4) partner with leading research environments worldwide to increase the internationalisation of Norwegian AI research; and (5) develop methods and strategies for cross-, multi-, and interdisciplinary collaboration disciplines and support complex problem-solving through cross-sectoral collaboration.

MishMash will have **both academic and societal impact** on AI and creativity in the entire breadth of disciplines represented within the centre, based on *creating* new methods and practices, *exploring* these and other practices, and *reflecting* on our own and others' experiences. Cross-WP deliverables include innovative practices involving Creative AI, scientific publications on outputs and results, guidelines for the ethical use of Creative AI in various practices and disciplines, and relevant policy recommendations. MishMash will also deliver artistic outputs, industry seminars, various courses for different groups, and collaborative projects to build competencies and drive innovation in the creative sectors (see 2.2 for specific stakeholder impact). Another general contribution will be developing theoretical frameworks that bridge different epistemologies. Developing this proposal has already revealed how various disciplines use the same term with different meanings or different terms with the same meaning (e.g., "AI", "creativity", "multimodal", "synchronous", and "learning"). While it is not a goal to reach a consensus in such matters, MishMash will publish experiences on interdisciplinary knowledge exchange, co-authored across disciplines, contributing to the discourse on current and emerging interdisciplinary challenges.

Each WP will have specific contributions that address various **UN Sustainable Development Goals**. WP1 will develop adaptive, real-time, low-latency AI algorithms for artistic practice, creation and performance, promoting innovation (SDG9) and encourage sustainable production practices (SDG12). WP2 will create experimental AI-based artistic works and prototypes to examine how generative AI affects creative processes. It will also develop recommendations for artist-centred AI tools that address cultural biases and ethical challenges (SDGs 10 and 16). WP3 will generate knowledge about human-AI perception and develop user-informed guidelines for disability-inclusive integration of AI for health and well-being (SDG3), focusing on disability-inclusive, ethically sound, and salient frameworks (SDG10). WP4 will produce applicable knowledge and resources for education at all levels, focusing on continuous professional development, life-long learning for existing educators, and long-term effects through teacher training (SDG4). WP5 will explore AI's impacts on artistic integrity and the economy, promoting sustainable growth (SDG8) and fostering innovation in creative industries (SDG9). WP6 will develop and explore multimodal information retrieval systems to enhance the preservation and accessibility of cultural heritage (SDG11), ensuring ethical and legal compliance (SDG16). WP7 will develop task-specific AI-driven human-computer co-creation solutions, promoting innovation (SDG8).

**Reproducibility and potential reuse of project outputs** will be central to MishMash's research activities. Many researchers in our network have long championed Open Research principles. We prefer "open research" to "open science" to emphasise our ambition of including perspectives from both artistic and scientific research practices. We will focus on publishing in leading Open Access channels, with early access in recognised preprint archives. Data and media will be shared according to the FAIR principles, with necessary considerations of privacy and copyright (see 3.4 for details). We will also strive to provide open-source code for software and hardware developed in MishMash, typically using platforms like GitHub and GitLab. Licensing will be a crucial discussion point in the network, aiming to balance freelancers' and larger corporations' interests and needs. Providing source code with permissive licenses will benefit many stakeholders, including institutions, organisations, and individuals across creative and educational sectors. This open-source approach will have a positive

influence on promoting and supporting minority groups within the country and also support the de-colonial profile of the centre, providing resources to researchers and practitioners far beyond Norway.

MishMash will **promote future value creation** by championing human-centred approaches to AI development and empowering individuals and institutions with alternatives to mainstream, commercial solutions. The MishMash network will, in itself, be key to promoting future value creation. There has never been a consortium in Norway at this scale, spanning the broad spectrum of academic disciplines interested in creativity and technology, coupled with a strong non-academic partner group from both the public and private sectors. The large number of institutions and individuals involved in this proposal demonstrates our ambition of being an “open door” centre where the greatest value will come from people working together in various constellations.

**Researcher training** will be a key element of the centre. All involved higher education institutions will have at least one PhD fellow connected to the centre, and many will have several. They will benefit from the large network and various centre activities, including for-credit micro courses held during the biannual symposia. The micro courses will also be open for advanced students and may be relevant for some postdoctoral fellows and others who want specialised input on various methods or topics. The ambition will be to apply for funds to support a national research school after MishMash.

## 2.2 Measures for communication and exploitation

### Target Audiences and Stakeholders

MishMash targets a range of audiences and stakeholders to ensure broad impact and collaboration:

**The Norwegian research community:** The national impact is implicit since the MishMash network comprises nearly all relevant Norwegian institutions.

**The worldwide research community:** All WPs will engage actively with relevant institutions interested in AI in and through creativity, spanning the arts, humanities, social and natural sciences, design, and engineering. We will partner with a wide range of international experts (see letters of intent for details) and participate in relevant conferences and networks.

**Creative individuals and industries:** We will partner with freelancers and relevant organisations, including TONO (Norwegian Performing Rights Society), GRAMO (Norwegian Collective Management Organisation for Musicians and Performers), NOPA (Norwegian Society of Composers and Lyricists), Dramatikerforbundet (Writers’ Guild of Norway), Norsk Filmforbund (Norwegian Film Workers Association), Media City Bergen: Media Cluster Norway, and Virke (Film Producers Association). MishMash will address the legal and ethical challenges of AI-generated content and promote innovative solutions such as AI-driven rights management systems for fair revenue distribution. Improved policies and guidelines (from WP5) can cultivate new business models and opportunities in the creative sector, which accounts for 3% of Norway’s BNP and around 4.3% of the Norwegian workforce (Menon/BI, 2014).

**Cultural institutions:** Key archives and libraries in Norway need AI-based tools for their collections. This includes The National Library, The National Museum, and NRK (Norwegian Broadcasting Corporation) but also museums (Teknisk museum, Kunstsilo, Lydgalleriet, ANNO), technology-driven artist centres (NOTAM, TEKS, BEK), festivals (Ultima, Metamorf, Pixel, Punkt), performance venues, and relevant foundations (Cultiva). This group will benefit from MishMash by developing tools for training AI on local culture (WP6) and legal and ethical guidelines and policy recommendations (WP5).

**Educational Institutions:** We will primarily impact the teaching and learning in the involved higher education institutions but will also contribute to researcher training through NORA (Norwegian Artificial Intelligence Research Consortium). To reach younger audiences, we will partner with key organisations like Kulturtanken (Arts for Young Audiences Norway), Kunstkultursenteret (The Norwegian Centre for Arts and Culture in Education), and Kulturskolerådet (Norwegian Council for Schools of Music and Performing Arts). We will also collaborate with AKKS (focused on improving gender balance in the music industry), Oslo Kreativ AI (a group that organises meetups exploring the intersection of AI, creativity, design, and media), and Jeunesses Musicales Norway (part of the world’s largest international network for music and youth). These stakeholders will benefit from collectively developed practices involving AI for teaching and learning through resources, frameworks and guidelines (WP4).

**Health and Medical Sector:** WP3 will work closely with relevant health entities and partner with the Polyfon Knowledge Cluster for music therapy to achieve a geographically broad representation of specialised and municipal health entities and regional health innovation clusters such as HelseINN.

**Industry Partners:** WP1 and WP2 will work with startups that can benefit from creative approaches to human-centred AI technologies, including SiFi Labs (Canada/Norway), MotionComposer (Germany), Sarepta Studio (Norway) and StoryPhone (Norway). WP5 is important for companies that provide AI-based products for cultural industries, like ForzaSys (Norway) and Fynd Reality (Norway). Halogen AS (Norway) is a leading design consultancy involved in WP7.

### **Dissemination, Communication, and Engagement Activities**

Fundamental research results will be communicated through traditional **academic channels**. Given our broad disciplinary scope, research outputs will vary from monographs and book chapters to journal articles and conference proceedings papers. We will particularly encourage co-authorships between researchers from different disciplines and institutions. While this may be more challenging initially, it is crucial for establishing genuine interdisciplinary dialogue and supporting further collaboration.

We will also **engage broadly on social media** via feature stories, podcasts, vlogging, and AI-powered apps. In addition to general dissemination, we will collaborate with partners to reach specific creative audiences (see list above). Then, we can also include an edutainment element, showcasing our research results and providing tools that users can test themselves. We will also leverage the NORA network to reach AI enthusiasts through their events and communication channels.

**Public performances and exhibitions** are integral to our work, with the potential to reach broader audiences beyond the MishMash network and academia. Demonstrating and testing AI-based systems in real-world venues such as concert halls or museums will be an essential part of the iterative design process for many of the centre's researchers. We partner with local cultural institutions and festivals to engage diverse audiences through interactive installations and AI-driven art exhibitions. Such "real-world" exploration—together with AI-powered smartphone apps—can even lead to new scientific discoveries, as seen in research events like the MusicLab concert series (Høffding, Hansen, and Jensenius 2024).

Since our partners are spread nationwide, we are acutely aware of the need to establish robust **internal communication channels**. Most centre activities will use synchronous (meetings and seminars) and asynchronous (discussion groups and file sharing) online platforms. Our network is based on an inclusive spirit, and we aim to implement technical solutions and cultivate a social atmosphere that welcomes people from diverse backgrounds. The weekly online "lunch" meetings will be for partners only, but webinars and guest lectures will be openly available. The latter will be available in an open archive (pending permissions).

Particular attention will be paid to **student partnership** in all activities. More than two dozen PhD fellows and hundreds of students from the various partner institutions will be involved in MishMash. Students bring fresh perspectives that can impact ongoing research, serve as early adopters of developed technologies, and play key roles in bringing technical know-how and critical reflection into society during the centre's lifetime.

Developing educational materials and strategies for **lifelong learning** will be coupled with workshops for creative professionals, educators, and technologists. Many of these workshops will be organised in cooperation with local partners, including NOTAM (Norwegian Center for Technology in Music and the Arts, Oslo), BEK (Bergen Center for Electronic Arts), TEKS (Trondheim Electronic Arts Centre), and AKKS (an organisation focused on improving gender balance in the music industry). These workshops will provide hands-on training to explore co-creative processes using AI, which are essential to avoid a generation-long lag in AI literacy.

### **Planned Activities to Realize Potential Impacts**

Setting up the network and initiating regular activities is key to realising academic impact. Regular centre-wide activities will include:

**MishMash Symposia** will occur once a semester and rotate between partner institutions. Everyone in the network will be invited to these three-day events. The content will be divided into plenary sessions with lectures of broad interest, parallel hands-on workshops on specific topics and methods, networking events for engagements with local stakeholders, educational activities for PhD fellows and local students, and an artistic program organised in collaboration with local cultural institutions.

**MishMash Lunch Seminars** will be a weekly check-in point for everyone. These will be short (max. 1 hour) online meetings. The first 15 minutes will be dedicated to administrative information and celebrations (new publications, birthdays, etc.). The remaining time will feature a work-in-progress presentation by network members, designed to be accessible in form and content to everyone.

**MishMash WP Meetings** will be held biweekly to foster knowledge exchange and discussion within each WP. Most of the work will occur in smaller groups of researchers, and the WP meetings will serve as a crucial arena for presenting ongoing research and receiving feedback and advice.

**MishMash Perspectives Meetings** will be held monthly to engage participants in centre-wide discussions on the three perspectives (machines, humans, society). The goal is to connect individuals who do not typically work together and ensure an exchange of ideas on essential topics across WPs.

**MishMash Residencies** will support artists spending time with one of the academic partners. Such visits will typically conclude with a public showing and/or workshop to disseminate ideas developed during the stay. We are also eager to support short-term mobility between academic and non-academic partners, including internships for advanced students.

**MishMash Stakeholder workshops** will be organised with the biannual symposia and as needed. Each WP can nominate topics pertinent for stakeholder discussion or propose hands-on sessions to test prototype systems. The feedback gathered from these workshops will be invaluable in the iterative design and implementation process, helping to refine and enhance project outputs.

### 3 Implementation

#### 3.1 AI Centre Manager and Project Group

The Centre Manager, **Alexander Refsum Jensenius**, is Professor of Music Technology at the University of Oslo and Director of RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion (2017–2027), a Norwegian Centre of Excellence comprising researchers from musicology, psychology, and informatics. He has researched and taught both rule-based and learning-based AI approaches for two decades, and nearly all his PhD fellows have developed or used AI methods in their projects. Prof. Jensenius is renowned for innovative approaches to studying music-related body motion using various sensing technologies and applying this knowledge in interactive music systems. He has published two monographs, two anthologies, and 158 scientific articles, chapters, and proceedings papers and delivered numerous scientific and artistic presentations and performances worldwide. His research interests include embodied AI, multi-agent systems, and human cognition-inspired machine learning. Prof. Jensenius has extensive leadership experience, including as Head of Department (2013-2016). As Chair of the Steering Committee for the International Conference on New Interfaces for Musical Expression (2011–2022), he led a global community of several thousand researchers and practitioners focused on the creative (musical) use of technologies, including various AI approaches. An active Open Research advocate, he represented Norway in the European University Association’s Expert Group on Open Science (2018–2024). In sum, Professor Jensenius’ broad and interdisciplinary track record, progressive leadership vision, and extensive management experience make him the ideal candidate for leading such an ambitious project. In addition to overseeing the entire centre, he will lead the perspective of *machines*.

The **Management Team** will consist of the centre manager, two deputy managers, and two administrative members: **Daniel Nordgård** is a Professor in Music Business and Management at the University of Agder and Director of the Center of Creative Use of Technology in Music Education (CreaTeME). Nordgård has extensive experience from the professional music industries, nationally and internationally, and from sitting on numerous boards in the music industries, film industry and different political bodies. He researches the impact of AI on the music industry, particularly how AI can influence creative processes and business models in music. He will have a particular focus on the *society* perspective in the centre. **Ida Jahr** is an Associate Professor of English Literature and Culture at the University of Inland Norway (INN). She heads the MA program in Digital Communication and Culture and researches the role of AI in digital culture, as well as the imaginaries of AI in culture. She will have a particular focus on the *humans* perspective in the centre. **Thomas De Ridder** (UiB) has extensive experience as a research coordinator and will lead the centre’s work on research application development. Finally, a new **head of administration** (UiO) will oversee the centre’s daily operations and coordinate the work of the other administrators involved.

WP activities will be run by one leader and two deputies from different institutions and expertise:

**WP1: Kyrre Glette** (UiO) is Professor of Computer Science who researches intelligent, adaptive, and biologically inspired systems, particularly in robotics and embedded systems. He has worked on projects involving AI-driven creativity, such as using evolutionary algorithms for robotic co-design and for sonic exploration. Prof. **Morten Qvenild** (NMH) has extensive experience as a musician and leader of music

and art projects involving novel technologies and AI. Assoc. Prof. **Georgios Marentakis** (HiØ) researches human-computer interaction, focusing on sonic interaction design. He is particularly interested in the design and reception of interactive performances and installations in the sonic arts.

**WP2: Budhaditya Chattopadhyay** (UiB) is an award-winning sound and media artist, a Visiting Professor at the University of Applied Sciences and Arts Northwestern Switzerland, Basel, a Researcher at the Faculty of Fine Art, Music and Design, University of Bergen, and a former Google Artist and Machine Intelligence Fellow. Assoc. Prof. **Sashi Komandur** (INN) specialises in Applications of games and VR/AR technologies in operational contexts. Prof. **Synne Tollerud Bull** (Kristiania) specialises in film and media art, focusing on media technologies and AI's creative potentials.

**WP3: Claire Ghetti** (UiB) is Professor of Music Therapy with research interests in promoting health equity through inclusive AI applications in the creative arts and in developing novel AI-integrated research methodologies for health contexts. Prof. **Andreas Bergsland** (NTNU) focuses on movement-sound interaction and live electronics. Prof. **Jonna Vuoskoski** (UiO) specialises in music psychology and the social and emotional aspects of music cognition.

**WP4: Hilde Norbakken** (UiA) is Associate Professor in popular music and co-director of the Center of Excellence in Creative Use of Technology in Music Education (CreaTeME) at the University of Agder. She is particularly interested in curriculum development, creative use of AI, and art education leadership. Prof. **Sidsel Karlsen** (NMH) specialises in music education, cultural diversity and inclusion across formal and informal contexts. Prof. **Fredrik Graver** (INN) specialises in fine arts pedagogy and explores the role of AI in film education, notably how AI can support creative storytelling and film production.

**WP5: Ragnhild Brøvig** (UiO) is Professor in Popular Music Studies. She has authored two MIT Press monographs and numerous articles on the impact of digitisation on popular music and culture. She also leads a WP in CreaTeME (CEE at UiA) on the effects of digitalisation on the music business and entrepreneurship.

**Irina Eidsvold-Tjøien** (BI) is Professor in law and specialises in intellectual property rights and the impact of digitalisation on the creative industries, particularly artists' rights and how different technological changes affect the revenue streams to the creative contributor in the cultural production chain. Assoc. Prof. **Jon Marius Aareskjold-Drecker** (UiT) is a researcher focusing on music production, a prize-winning music producer, and the CEO of Unifractal, a startup company that uses AI tools for microlearning.

**WP6: Ingrid Romarheim Haugen** (NB) is Section Leader at the National Library of Norway, overseeing music-related research and collections. Prof. **Arnulf Mattes** (UiB) specialises in the cultural history of music and leads the Norwegian Musical Heritage project. **Olivier Lartillot** (UiO) specialises in AI for music and sound analysis within the transdisciplinary field of computational musicology. He led the project *MIRAGE - A Comprehensive AI-Based System for Advanced Music Analysis*, focusing in particular on automated transcription and analysis of the Norwegian Folk Music Archive.

**WP7: Carsten Griwodz** (UiO) is Section Leader at the Department of Informatics and Professor of Computer Science. His research focuses on distributed immersive systems, exploring how AI can overcome the challenges of scale and distribution and enhance the creative process in producing interactive and multimodal media. Prof. **Kjetil Nordby** (AHO) is known for his interaction designs for ocean industries. Prof. **Baltasar Beferull-Lozano** (Simula) focuses on data science and machine learning.

The WPL team has been composed with a focus on diversity in scientific disciplines, research topics, methodological competencies, career stages, gender, and institution. There is a skew towards musical perspectives, reflecting the current status in Norwegian institutions. However, the team is eager to ensure knowledge transfer and expects a better integration of other fields throughout the centre's lifespan. All WP leaders have extensive management experience, including current or former directors of a total of four Norwegian Centres of Excellence (RITMO, CreaTeME, CEMPE, CEFIMA).

The WPLs will coordinate the activities of a large group of faculty members, early career researchers (doctoral and postdoctoral fellows), and students (advanced bachelor's and master's). The table below lists the faculty members who have signed up to be full centre members and devote research time to the initiative. It also lists ongoing early career researchers that will join the initiative. In addition, we plan to hire 25 PhDs and 2 postdoctoral fellows (13 RCN funded and 14 from partner contributions) to the centre in 2026. The aim is to create project teams for each RQ that spans institutions and disciplines. Everyone involved needs to be connected to at least one RQ, but many will choose multiple. A key role for WPLs is to facilitate meeting points, guide research directions, and assist in multidisciplinary dialogue.

Table 1: Researchers involved in the various work packages (WPs).

WP1
<p><b>WPLs:</b> Kyrre Glette (computer science, UiO), Morten Qvenild (music performance, NMH, Georgios Marentakis (human-computer interaction, HiØ))</p> <p><b>Senior researchers:</b> Anders Tveit (music technology, NMH), Daniel Formo (music technology, NTNU), Gunn Tove Grønsberg (film, INN), Hans Julius Skaug (statistics and ML, UiB), Håvard Vibeto (game development, INN), Ivar Grydeland (jazz improvisation, NMH), Kevin Tan (extended reality, INN), Koka Nikoladze (music technology, NMH), Marie Dahlén (3D, VR, Kristiania), Mathieu Lacroix (music technology, INN), Niklas Adam (performance technology, NOTAM), Stefano Nichele (bio-inspired AI, HiØ), Steven Bachelder (XR, INN), Stylianos Dimou (music composition, UiB), Tejaswinee Kelkar (music technology, UiO), Tonje Finne (TV production, INN), Tore Teigland (music technology, Kristiania), Trond Lossius (film education, INN), Troels Linde (film, INN), Tønnes Nygaard (robotics and AI, UiO), Øyvind Brandtsegg (music technology, NTNU)</p> <p><b>Early career researchers:</b> Cagri Erdem (informatics, UiO), Vincenzo Madaghiele (music technology, UiO)</p> <p><b>International collaborators:</b> Atau Tanaka (Goldsmiths), Charles Martin (Australian National University), Christian Guckelsberger (Aalto University), David Pirrò (University of Music and Performing Arts Graz), Palle Dahlstedt (Göteborg Universitet), Thor Magnusson (University of Iceland)</p>
WP2
<p><b>WPLs:</b> Budhaditya Chattopadhyay (sound and media art, UiB), Sashi Komandur (games and VR/AR, INN), Synne Tollerud Bull (film and media art, Kristiania)</p> <p><b>Senior researchers:</b> Albert Tang (design, UiB), Anne Karhio (literature, INN), Asbjørn Blokkum Flø (music composition, NOTAM), Budhaditya Chattopadhyay (fine arts, KMD), Christian Blom (music technology, NOTAM), Dániel Péter Biró (music composition, UiB), David Rych (film art, UiB), Eamon O’Kane (visual art, UiB), Gunn Tove Grønsberg (film sound, INN), Hans Kristian Strandstuen Rustad (literature, UiO/INN), Hans Zeiner-Henriksen (popular music, UiO), Henning Birkeland (3D visualisation and animation, Kristiania), Ivar Kjellmo (3D visualisation and virtual reality, Kristiania), Jostein Gundersen (music performance, UiB), Kai Olav Ellefsen (neural networks, UiO), Kristin Bergaust (OsloMet), Luz Maria Sanchez-Cardona (sound art, UiB), Marie Dahlén (film and media, Kristiania), Morten Moen (Motion Capture, VP, Visual Effects, Kristiania), Peter Baden (music composition/production, Kristiania), Rune Obrestad (film/TV, Kristiania), Sanu Vamanchery Mana (game development, INN), Scott Rettberg (digital narratives, UiB), Sigbjørn Galåen (3D graphics, Kristiania), Sirin Eide (film directing, INN)</p> <p><b>Early career researchers:</b> Benedikte Wallace (informatics, UiO), Hanna Maria Feronia Wennborg (sound art, UiB), Janne Sverdrupsen (time-based art, UiB), Marte Teigen (visual communication, UiB)</p> <p><b>International collaborators:</b> Axel Grigor (Dalarna University), Bob Sturm (KTH), David Medeiro Danielsen (Google), Hrafnkell Stefánsson (Icelandic Film School), Jeremy Woodruff (Uni. Music and Performing Arts Graz), Oded Ben-Tal (Kingston University London), Stefania Serafin (Aalborg Uni.), Joachim Haas (SWR Experimentalstudio)</p>
WP3
<p><b>WPLs:</b> Claire Ghatti (music therapy, UiB), Andreas Bergsland (movement-sound interaction, NTNU), Jonna Vuoskoski (music and emotion, UiO)</p> <p><b>Senior researchers:</b> Cathrine Felix (philosophy, INN), Felicity Baker (music therapy, NMH), Hege Tapio (art, science and technology, bio-inspired AI, OsloMet), Jonas Kunst (social psychology, UiO), Kim Larsen (religious studies, NLA), Karette Stensæth (music therapy, NMH), Mimmu Rankanen (art therapy, OsloMet), Nanette Nielsen (music and ethics, UiO), Sascha Frühholz (cognitive neuroscience, UiO), Simon Gilbertson (music therapy, UiB), Ulysse Côté-Allard (biosensing technologies, UiO), Viggo Krüger (music therapy, UiB)</p> <p><b>Early career researchers:</b> Eva Marija Vukich (music therapy, UiB), Kjersti Johansson (music therapy, NMH), Kristi Stedje (dementia and music, NMH), Zoi Efstathiou (AI in composition, NMH)</p> <p><b>International collaborators:</b> Eric Scheme (University of New Brunswick, Canada), Robert Wechsler (MotionComposer, Germany), Örjan de Manzano (Max Planck Institute for Empirical Aesthetics)</p>
WP4
<p><b>WPLs:</b> Hilde Norbakken (music education, UiA), Sidsel Karlsen (music education, NMH), Fredrik Graver (film education, INN)</p>

**Senior researchers:** Andreas Waaler Røshol (music education, UiA), André Bratten (musician and educator, UiA), Bjørn-Terje Bandlien (music teacher education, NTNU), Clemens Cavallin (religious studies, NLA), Eirik Sørbo (music education, UiA), Egil Reistadbakk (music teacher education, NTNU), Hans Gunnar Brekke (visual effects education, Kristiania), Hans Jørgen Støp (music education, Nord), Hanne Westgård (documentary film education, Kristiania), Ingolv Haaland (music education, UiA), Jens Knigge (music education, Nord), Kari Holdhus (music teacher education, HVL), Kariin Sundsbak (historian, INN), Kjersti Johansson (music education, NMH), Kristi Stedje (dementia and music, NMH), Lisa Gamlem (film education, Kristiania), Odd Torleiv Furnes (music teacher education, HVL), Ole Fredrik Norbye (music education, NLA), Per Ivar Kjærgård (pedagogy in higher education, NLA), Rolf Martin Snustad (music education, Nord), Rune Obrestad (film and TV education, Kristiania), SØS Gunver Ryberg (musician and educator, UiA), Stefania Serafin (Aalborg University), Steven Bachelder (gaming education, INN), Tine Grieg Viig (music teacher education, HVL), Tiril Schrøder (art&craft education, KHiO), Tore Teigland (music education, Kristiania), Trine Wester (art&craft education, KHiO), Øyvind Johan Eiksund (music teacher education, NTNU), Øystein Olav Skaar (educational psychology, INN), Øystein Stene (theatre education)

**Early career researchers:** Alessandra Bossa (music performance, UiA), Kristian Tverli Iversen (music education, HVL), Olav Renolen (music education, NMH), Ruzbeh Smiley (AI in music production, UiA)

**International collaborators:** Axel Grigor (Dalarna Audiovisual Academy (DAVA)), Jakob Høgel (the National Film School of Denmark), Linda Sternö (Gothenburg University), Steven Meyers (Iceland University of the Arts), Maria Hedman Hvitfeldt, Thomas Brennan (Stockholm University of the Arts)

#### WP5

**WPLs:** Ragnhild Brøvig (popular music studies, UiO), Irina Eidsvold-Tøien (intellectual property rights, BI), Jon Marius Aareskjold-Drecker (music production, UiT),

**Senior researchers:** Anne-Britt Gran (communication and culture, BI), Ilias Pappas (Information Systems, UiA), Lina Plataniti (NORSUS), Peter Booth (cultural economics, BI), Rustem Dautov (sustainable communication technology, SINTEF), Shukun Tokas (sustainable communication technology, SINTEF), Terje Colbjørnsen (communication and culture, BI), Terje Gaustad (music and film, Kristiania), Xenia Vassilakopoulou (Information Systems, UiA), Yngvar Kjus (music and media, UiO)

**Early career researchers:** Baptiste Bacot (music generative AI, UiO), Rusbeh Smiley (music production and AI, UiA), Vemund Hegstad Alm (sampling platforms and AI, UiO)

**International collaborators:** Catherine Fisk (UCLA, Berkeley School of Law), Justin Hughes (Loyola School of Law, LA, USA), Martin Clancey (AI:OK), Nancy Baym (Microsoft), Keith Negus (Goldsmith University), Zhang Quian (Communication University of China).

#### WP6

**WPLs:** Ingrid Romarheim Haugen (music collections, NB), Arnulf Mattes (music history, UiB), Olivier Lartillot (music information retrieval, UiO)

**Senior researchers:** Christian Grøvlen (KODE), Daniel Øvrebø (librarian, UiB), Hanne Westgård (documentary film, Kristiania), Jørgen Langdalen (musicology, Kristiania), Kim Tallerås (library and information science, OsloMet), Linnéa K. Jermstad (higher education, NLA), Pierre Beauguitte (music information retrieval, NB), Richard Gjems (Rights management and music collections, NB), Rune Obrestad (film and TV, Kristiania), Synne Tollerud Bull (film and media art, Kristiania), Thomas Bårdsen (Musicology, NB)

**Early career researchers:** Anna-Maria Christodoulou (music information retrieval, UiO), Hugh von Arnim (music signal processing, UiO)

**International collaborators:** Anja Volk, Frans Wiering, Peter van Kranenbourg (Utrecht University), Baptiste Caramiaux (Sorbonne University), David Meredith (Aalborg University), Emilio Ros-Fábregas (Institución Milá y Fontanals), Jan Nåls, Mirko Ahonen, Maria Bäck (Arcada University of Applied Sciences, Helsinki), Xavier Serra (UPF)

#### WP7

**WPLs:** Carsten Griwodz (computer science, UiO), Kjetil Nordby (interaction design, AHO), Baltasar Beferull-Lozano (data science, Simula)

**Senior researchers:** Ali Ramezani (core AI, UiO), Enrique Encinas (Interaction Design, AHO), Henrik Sundt (sound technology, NOTAM), Jim Tørresen (AI and robotics, UiO), Kjetil Raaen (mobile technology, Kristiania), Mohamed-Bachir Belaid (environmental AI, NILU), Ole Goethe (human-engaged computing, Kristiania), Pål Halvorsen (AI applications, SimulaMet), Stefano Fasciani (audio and AI, UiO)

**Early career researchers:** Balint Laczko (life science sonification, UiO), Changkyu Choi (explainable AI, UiT)  
**International collaborators:** Gregor Schiele (University Duisburg-Essen), Hendrik Knoche (Aalborg University), Herman Engelbrecht (University of Stellenbosch), Peter Lewis (Ontario Tech University)

### 3.2 AI centre organisation and management

MishMash will have a governance model split into the following formal and informal boards and groups:

**The MishMash Board** will consist of seven members, including a leader from a different institution than the centre host, two faculty members, one administrator, one temporary member, one student, and one industry representative. They will meet twice per semester to make decisions about the operations, budgeting, hiring, and strategic development. The Centre Manager will be an observer, and the Head of Administration will serve as the board's secretary.

**The MishMash Council** will have one representative from each academic partner institution and meet once a semester. Its role is to inform the centre's operations and give general advice. Many council members will likely hold a leadership position in their organisation, follow up on priorities and matters of importance for their institution, and facilitate new collaborations and funding opportunities.

**The MishMash Advisory Board** will consist of a select group of international experts covering various aspects of the centre's activities. They will meet once a year to advise on the centre's activities and priorities. Members of the Advisory Board will also be invited to visit Norway to give guest lectures or workshops at relevant institutions. The following international experts have accepted to be part of the advisory board: **Benoit Maujean** (Head of Technicolor Research, France), **Catherine Fisk** (Prof. UC Berkeley Law, USA), **Jyoti Mistry** (Prof. film, Gothenburg University, Sweden), **Nancy Baym** (Senior Principal Research Manager, Microsoft, New England, USA), **Pamela Burnard** (Prof. arts, creativities and educations, University of Cambridge, UK), **Philippe Pasquier** (Prof. interactive arts and technology, Simon Fraser University, Canada), **Psyche Loui** (Assoc. Prof. creativity and creative practice, Northeastern University, USA), **Ravi Kiran Sarvadevabhatla** (Assoc. Prof. computer vision and machine learning, IIIT Hyderabad, India), **Sebastian Risi**, (Prof. creative AI, IT University of Copenhagen, Denmark), **Xavier Serra** (Prof. music technology, Universitat Pompeu Fabra, Spain), **Jon McCormack** (Prof. creative computing, Monash University, Australia), **Zhang Quian** (Prof. music and recording art, Communication University of China, China).

**The MishMash Stakeholder Board** will comprise representatives from relevant public and private organisations. They will meet with the WP leaders annually to provide general advice. Additionally, members will be consulted on topics pertinent to their expertise and engaged in fostering two-way mobility with MishMash. The goal is to establish pilot projects or case studies that demonstrate the practical applications of our findings in collaboration with stakeholders.

**The MishMash WP Leader Group** will meet monthly to discuss academic progress and plan activities.

**The MishMash Management Team** will meet weekly to discuss the centre's daily operations.

We will emphasise creating a welcoming environment for a diverse group of individuals from both academic and non-academic backgrounds. During the first symposium in autumn 2026, we will develop a **Code of Conduct** (CoC) that will apply to all participants and all settings. This CoC will be revised and refined during subsequent symposia, with time for meta-reflection on our collaborative practices. Such in-person discussions are crucial for establishing the social connections that support our online collaborations.

### 3.3 Collaboration with other AI centres

We will coordinate activities and collaborative initiatives with other AI centres that receive funding. The Centre Manager, who has experience running a network of Centre of Excellence directors at UiO, will propose establishing a similar informal network for the new AI centres. This network can efficiently address joint challenges and plan new general activities like diversity issues or career development workshops. Additionally, we will plan joint activities with relevant centres on specific topics, including algorithm development, human evaluation methods, and entrepreneurship strategies. Exploring joint educational activities will also be beneficial, perhaps in collaboration with NORA. Furthermore, we propose creating a network of centre administrators. Since all centres will operate nationwide, they will likely encounter similar challenges related to partner contracts, budgeting, web pages, communication, etc. This network will facilitate sharing best practices and solutions to common administrative issues.

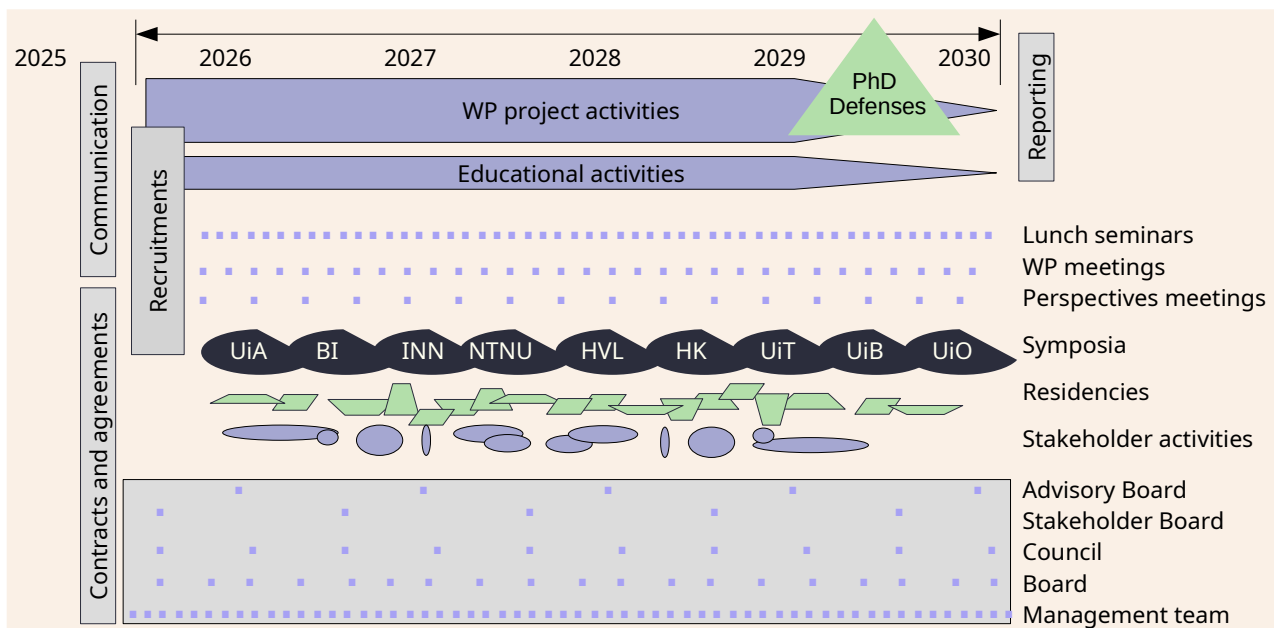


Figure 3: A visual overview of planned MishMash activities. The grey boxes represent administration and management tasks.

Table 2: MishMash partners, their roles, and how they will participate in the project.

Roles	Costs (NOK)
The costs of the partner <b>research organisations</b> : UiO (project owner), AHO, BI, HIØ, HVL, INN, Kristiania, NB, NILU, NLA, NMH, NORD, NORSUS, NTNU, SimulaMet, Sintef, UiA, UiB, UiT	NOK 311 360 000
The costs of other Norwegian partners: <b>Business sector (LLCs)</b> : Fynd Reality AS, Halogen AS, Media Cluster Norway AS, Multikjetil AS, Reimagine AS, Sarepta Studio AS, StoryPhone AS. <b>Associations and interest groups</b> : AKKS Norge, GramArt, GRAMO, JM Norway, Kulturskolerådet, Oslo Kreativ AI (OKAI), DHKO, Norwegian Society of Composers and Lyricists (NOPA), TONO, VRINN <b>Museums, galleries and festivals</b> : ANNO, Atelier Nord, Bergen International Festival, Borealis, KODE Bergen Art Museum, Kunstsilo, Nasjonalmuseet, PUNKT, Teknisk museum, Ultima, Vest-Agder Museum <b>Foundations</b> : Notam, BEK, Skapia, TEKS <b>Public sector organizations and enterprises</b> : Norwegian Broadcasting Corporation (NRK), Cultiva, Hamarregionen utvikling, HelseINN, Kilden Performing Arts Centre, Kulturtanken, Norwegian AI Cloud (NAIC), Norwegian Centre for Arts and Culture in Education, (NCACE), Polyfon, Skolene i Innlandet	Many partners will have in-kind contributions, such as employee working time & infrastructure access (prototyping, concert halls, gallery spaces, etc.). We have been unable to quantify these contributions, and after consulting with RCN, we are leaving this field open. See the Letters of Intent for information about each partner's contribution.
Total project cost	NOK 311 360 000
Participation (percent)	-

### 3.4 Data and computing power

Research data management will adhere to the **FAIR principles**. We will use trusted scientific data repositories such as DataverseNO or Zenodo to ensure *findability* through persistent identifiers to datasets. Library and museum collections will connect to the European Cultural Heritage Cloud. Artistically oriented datasets will be deposited in repositories such as Freesound and Research Catalogue, which creative professionals frequently use. The data, along with data management plans and relevant software and documentation needed to access or parse them, will be made *accessible* as openly as possible but as closed as necessary, pending privacy and copyright limitations. We will ensure *interoperability* by releasing data using standard/open file formats. To

maximise *reusability*, we will aim to release data with permissive licenses (e.g., CC-BY) and provide detailed documentation to facilitate understanding and reuse. We will also use and teach usage broadly throughout the network and beyond.

Concerning **computing resources**, the approaches in the centre are diverse. Much of the research will focus on developing small, personalised, and real-time models, with development occurring on local (GPU-equipped) workstations running interactive systems. The exploratory and reflective activities will largely rely on already available and pre-trained AI systems, reducing the need for large-scale training. However, audiovisual datasets will be used for training and fine-tuning, and user data will be collected and analysed from user interaction. Consequently, there will be a moderate need for access to high-performance computing services with mixed CPU and GPU resources and moderate data storage requirements. The academic partners have access to various local infrastructure, such as GPU-equipped workstations for interactive use and local computing clusters (e.g., UiO's Fox cluster with around 3000 CPUs and 50 high-performance GPUs). In addition, we will use the Sigma2 national computing infrastructure for computing and data storage, with costs budgeted accordingly, and leverage the Norwegian AI Cloud initiative for additional HPC resources and training. Non-academic partners will benefit from the computing platform established by Creative Computing Hub Oslo (C2HO). This low-entry platform for using machine learning in creative practice has been developed at UiO so that it is easily accessible to freelancers and others without institutional computing resources.

## References

- Abadi, M. A. et al. (2023). "The Turning Point of Civilization: Sociological Perspective toward Artificial Intelligence on Modern Humanity". In: *Simulacra* 6.2.
- Anscomb, C. (2024). "AI: Artistic Collaborator?" In: *AI & SOCIETY*.
- Blitz, M. J. (2018). "Lies, Line Drawing, and (Deep) Fake News". In: *Oklahoma Law Review* 71.1.
- Boden, M. A. (2004). *The Creative Mind: Myths and Mechanisms*. Routledge.
- Bozkurt, A. et al. (2024). "The Manifesto for Teaching and Learning in a Time of Generative AI: A Critical Collective Stance to Better Navigate the Future". In: *Open Praxis* 16.4.
- Bryan-Kinns, N. et al. (2024). "Explainable AI and Music". In: *Artificial Intelligence for Art Creation and Understanding*. 1st ed. Boca Raton: CRC Press.
- Cohen, H. (1995). "The Further Exploits of AARON, Painter". In: *Stanford Humanities Review* 4.2.
- Colton, S. and G. A. Wiggins (2012). "Computational Creativity: The Final Frontier?" In: *ECAI 2012*. IOS Press.
- Dahlstedt, P. (2021). "Musicking with Algorithms: Thoughts on Artificial Intelligence, Creativity, and Agency". In: *Handbook of Artificial Intelligence for Music: Foundations, Advanced Approaches, and Developments for Creativity*. Springer.
- de Vries, K. (2020). "You Never Fake Alone. Creative AI in Action". In: *Information, Communication & Society* 23.14.
- Duan, J. et al. (2022). "A Survey of Embodied AI: From Simulators to Research Tasks". In: *IEEE Transactions on Emerging Topics in Computational Intelligence* 6.2.
- Erdem, Ç. et al. (2022). "Tool or Actor? Expert Improvisers' Evaluation of a Musical AI "Toddler"". In: *Comp. Music Jrn.* 46.4.
- Fancourt, D. and S. Finn (2019). *What Is the Evidence on the Role of the Arts in Improving Health and Well-Being? A Scoping Review*. World Health Organization. Regional Office for Europe.
- Geiger, C. and V. Iaia (2024). "Towards an Independent EU Regulator for Copyright Issues of Generative AI: What Role for the AI Office (But More Importantly: What's Next)?" In: *Auteurs & Média* 2.
- Høffding, S., N. C. Hansen, and A. R. Jensenius (2024). "Music Research "in the Wild" – Introducing the MusicLab Copenhagen Special Collection". In: *Music & Science* 7.
- Huang, R. et al. (2023). "Beyond Diverse Datasets : Responsible MIR, Interdisciplinarity, and the Fractured Worlds of Music". In: *Transactions of the International Society for Music Information Retrieval* 6.1.
- Jensenius, A. R. (2021). "Best versus Good Enough Practices for Open Music Research". In: *Empirical Musicology Review* 16.1.
- (2022). *Sound Actions: Conceptualizing Musical Instruments*. Cambridge, MA: The MIT Press.
- Jónsson, B. Þ., Ç. Erdem, and K. Glette (2024). "A System for Sonic Explorations With Evolutionary Algorithms". In: *Journal of the Audio Engineering Society* 72.4.
- Lartillot, O. et al. (2022). "Segmentation, Transcription, Analysis and Visualisation of the Norwegian Folk Music Archive". In: *Proc. Int. Conf. Digital Libraries for Musicology. DLfM '22*.
- Lawton, T. et al. (2023). "Drawing with Reframer: Emergence and Control in Co-Creative AI". In: *Proceedings of the 28th International Conference on Intelligent User Interfaces*. Sydney NSW Australia: ACM.
- Long, D. and B. Magerko (2020). "What Is AI Literacy? Competencies and Design Considerations". In: *Proc. Conf. Human Factors in Computing Systems (CHI)*. CHI '20.
- Martin, C. P. et al. (2020). "Understanding Musical Predictions With an Embodied Interface for Musical Machine Learning". In: *Frontiers in Artificial Intelligence* 3.
- McCormack, J. et al. (2020). "Design Considerations for Real-Time Collaboration with Creative Artificial Intelligence". In: *Organised Sound* 25.1.
- Miranda, E. R. (2021). *Handbook of Artificial Intelligence for Music: Foundations, Advanced Approaches, and Developments for Creativity*. Cham, Switzerland: Springer.
- Paradise, A. et al. (2023). "RealTHASC—a Cyber-Physical XR Testbed for AI-supported Real-Time Human Autonomous Systems Collaborations". In: *Frontiers in Virtual Reality* 4.
- Sauvé, S. A. et al. (2023). "Anti-Colonial Strategies in Cross-cultural Music Science Research". In: *Music Perception* 40.4.
- Vallor, S. (2024). *The AI Mirror: How to Reclaim Our Humanity in an Age of Machine Thinking*. Oxford University Press.
- Vinchon, F. et al. (2023). "Artificial Intelligence & Creativity: A Manifesto for Collaboration". In: *The Journal of Creative Behavior* 57.4.