

# Media Formats

Faculty, staff and student researchers working in the Creative Technologies Lab come with a wide range of expertise in fields like interaction design (DXD, UX, UI), human-centered design, spatial experience, product design, and similar. In our teaching we focus on intuitive, effective, and intelligent designs that are visually accurate and perceptually pleasing. Through hands-on engagement, we let our students develop the skills to design interactive experiences, transforming interactions into meaningful engagements. By analyzing and experimenting, students learn to create solutions that adapt to evolving user behaviors and technological demands, shaping how users connect with information in a media-driven world.

In their studies our students explore existing media formats learning how users engage with digital and physical interfaces and systems. Those media formats define how information, data, interaction, and experiences are presented across digital and physical contexts, merging technology, content, and design. They shape user engagement through diverse applications, from handheld devices and touchscreens to embodied media, interactive installations, and virtual architectures. The study and application of those media formats go beyond technological analysis or development of innovation. Tailored to specific use cases, these formats play a crucial role in determining how information is communicated (storytelling) and offer unique opportunities to create engaging experiences that bridge digital and physical worlds. By doing so, they serve as a tool for education, and exploration.

## 1. Screen-based Formats

Screen-based media are one of the foundational formats. These include devices such as smartphones, tablets, information kiosks, and traditional touchscreen media stations running autoactive and/or interactive content. They provide an intuitive and interactive interface between users and digital content. Touchscreen-based applications, in particular, are frequently used for example in museums, exhibitions, or public information systems to present content in an engaging and user-friendly way. Thanks to their versatile applications, screen formats are suitable for both individual and public use, effectively bridging technology and everyday experiences.

## 2. Medial Artefacts & Embodied Media

Artefacts & Embodied Media include physical objects enriched with integrated technology, bridging the physical and digital worlds. These artefacts combine tangible forms with embedded sensors, electronics, or communication systems, enabling dynamic and innovative user experiences. Examples include wearables, such as smartwatches, fitness trackers, or e-textiles, which integrate personal accessories with interactive technologies. They also encompass interactive toys and educational tools, equipped with electronics and sensors to respond to touch, sound, or movement, fostering playful and educational engagement.

In addition, medial artefacts can also take form of kinetic installations, where physical structures or components move or react in response to user input or environmental stimuli. These installations merge mechanics and media to create dynamic interactions, often serving as artistic expressions or functional systems in public spaces, exhibitions, or industrial contexts. IoT devices, such as smart home systems, further exemplify how medial artefacts enhance everyday objects with connectivity and responsiveness, while augmented tools integrate traditional functions with digital enhancements,

such as AR-enabled repair kits or interactive measuring devices.

These artefacts can also include autonomous systems like robots or reactive exhibits, as well as prototyping artefacts, which explore potential applications of emerging technologies in design and user interaction. By embedding technology into tangible, reactive, and interactive forms, medial artefacts create opportunities for storytelling, exploration, and engagement, making technology accessible and meaningful in both functional and creative contexts.

### 3. Media-based Installations

Media-based installations provide an immersive way to experience content and are often used in public spaces, museums, exhibitions, trade fairs, or other industrial contexts. These installations often utilize touch-sensitive surfaces to ensure a high level of user engagement and enable dynamic interaction with the presented content. Examples include reactive and interactive exhibits that allow users to explore data, media tables designed for collaborative interaction, and industrial applications that for example visualize and control Industry 4.0 processes. Media installations in these contexts create compelling experiences, combining cutting-edge technology with intuitive design to engage audiences in diverse settings.

### 4. Media-enriched Spaces

Media-enriched spaces transform physical environments into interactive experiences by integrating media content such as live computational visuals, images, videos, or audio. These spaces allow visitors to immerse themselves deeply in a subject, making it accessible from various perspectives. Media-enriched spaces are ideal for enhancing traditional spaces, creating engaging and interactive experiences for educational institutions, showrooms, or thematic exhibitions.

### 5. Virtual Worlds and Media Architectures

Virtual worlds and media architectures push the boundaries of spatial perception through technologies like Virtual Reality (VR), Mixed Reality (MR), or Augmented Reality (AR). These formats create immersive and engaging environments that enable entirely new ways of interacting with virtual and physical spaces. Scholars of the Lab enjoy pushing the boundaries of what is possible. They have for example worked on a VR meeting room prototype to explore collaborative virtual work environments. In the realm of media architecture, large-scale projects such as media façades demonstrate how digital content can transform urban spaces into visually dynamic environments. These formats seamlessly combine architecture, media, and technology, opening new possibilities for design and communication.

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