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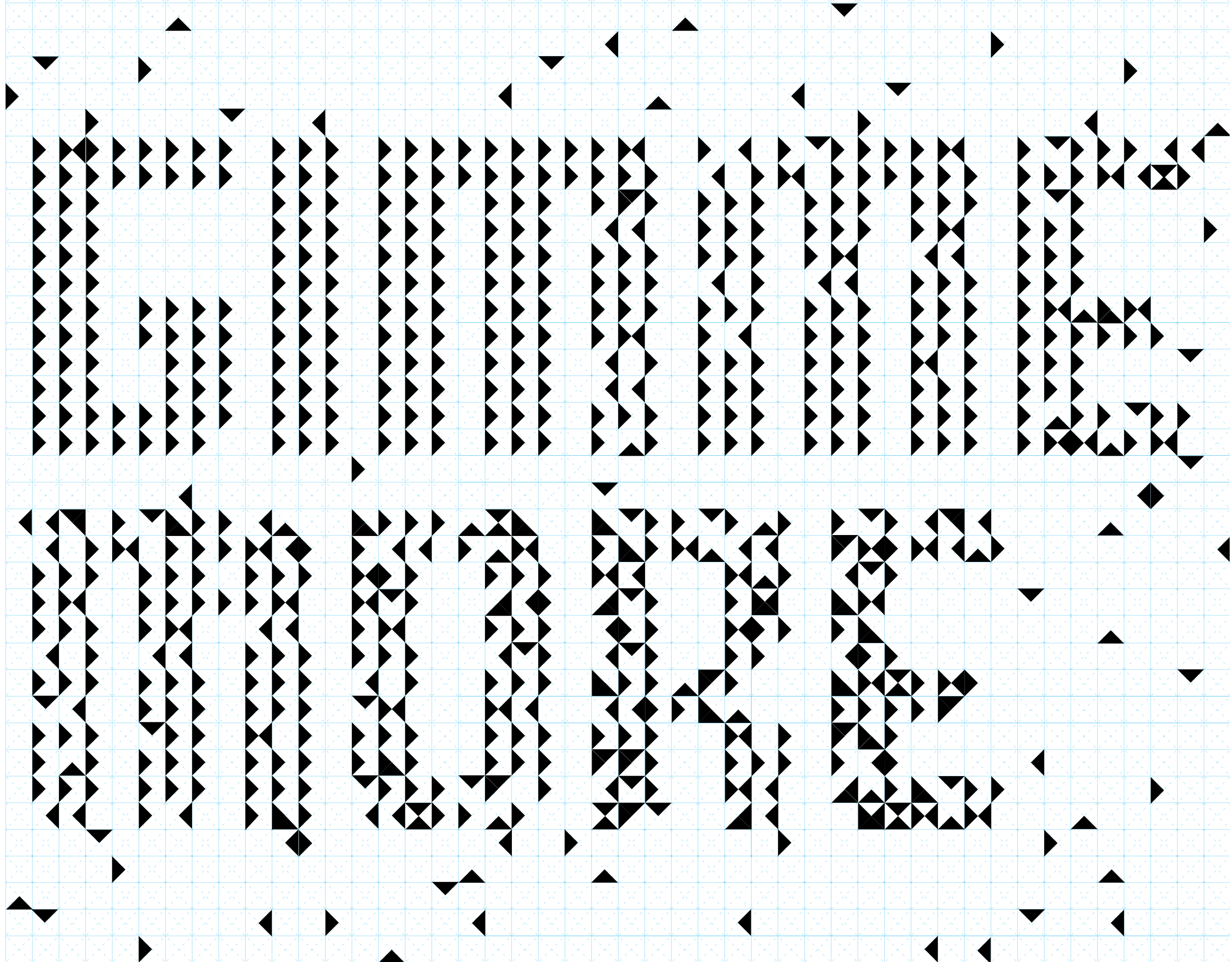
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Augmented Reality (AR) serves to visually enhance objects, spaces or people with virtual content. It has the potential to dramatically change the relationship between the physical and digital worlds. The EPFL+ECAL Lab, at the Ecole polytechnique fédérale de Lausanne, explores how to tell stories and create content with AR – in other words, how to give this technology the status of a real media. A media only exists if its narrative power and ability to express meaning and values take precedence over technological demonstration. To be truly effective a media's narrative power and its ability to express meaning must trump technological demonstration. Exploring the potential of emerging technologies through design, the EPFL+ECAL Lab has used the scientific achievements of the EPFL Computer Vision Laboratory to develop, together with designers, a unique narrative basis for AR.

Following four years of research and exhibitions around the world, an award from the DMY International Design Festival Berlin Prize and acclaimed academic publications, "Give Me More" comes to New York in a new edition, renamed Gimme More, enriched by several installations. More than an exhibition, the project is about confronting design research with the public in order to better understand perception principles of an emerging media bridging the real and the virtual worlds.

The prospects of augmented reality are linked to a fundamental question: What makes the value of an object, its identity, our relationship with it? The answer lies in the physical properties of the object, but also its immaterial qualities, such as the story it evokes, the references with which it is connected, the questions it brings up. For a long time, physical reality and immaterial values expressed themselves separately. But with digital technology an object can express its story, reveal information, interact with its context and users in real time. The potential for marketing, information, art, and more generally the significance and identity of objects, including our body, is almost unlimited provided that such performance brings new meaning.

Nicolas Henchoz, Director of the EPFL+ECAL Lab



▶ **TEXTER**

CEM SEVER (TUR, 2013)

Our body is immersed in a flow of invisible digital data. This installation turns our body into an aerial collecting the surrounding flows of digital information. Are we aware of the virtual flows submerging us? Are we in tune with their content? One screen shows us what happens here, in Manhattan. Then it beams you up to Switzerland and collects the information around Lausanne, in the Lab's neighborhood.

▶ **CASHBACK**

VINCENT JACQUIER (CH, ECAL, 2009)

Just take out a Euro banknote (the Swiss don't dare to make fun of dollars these days!) from your wallet or use a fake near the installation to start doubting its innocence. Placed on the Cashback glass, the note reveals its true twisted nature. The higher the note's value, the more content you get. Cashback shows how one can alter the perception of an object by allowing it to express a virtual content directly linked with its physical presence.

▶ **BEATVOX**

YURI SUZUKI (JP, 2010)

Renowned as an artist for his projects questioning the materiality of sound, RCA alumni Yuri Suzuki has his own way of looking at augmented reality. For Gimme More, he has created an installation which enables anyone to control a set of drums with their own voice. He harnesses the principles of augmented reality to interpret them in the realm of sound. Unlike the other installations, the augmentation is not digital here, it's physical.

▶ **LAST YEAR**

LIRON KROLL (ISR, 2013)

Family souvenirs blur our notion of real and imaginary. Fragments of memories like personal notes, postcards or portraits, are placed on a flat display, which call to mind an old classic museum. By passing above with an Ipad, fragments reveal small parts of the story. By looking at the different fragments the user begins to imagine his own story. The project breaks the principle of one real picture – one augmented story and involves the user in the creation of the augmented part.

▶ **BODY IMPACT**

THOMAS EBERWEIN (UK, 2013)

We have a permanent impact on our environment, and vice versa. Here the visitor is enveloped in a flow of particles, which alter when in contact with his/her body. As the users move and make gestures, their actions inevitably cause turbulence and leave tracks. The body itself turns into particles. This interaction and graphic research has paved the way for a new family of installations by EPFL+ECAL Lab, bordering on mixed reality.

▶ **LE MONDE DES MONTAGNES**

CAMILLE SCHERRER (CH, 2008)

Designed as a set of short stories set in the Swiss Alps illustrated with family pictures from 1910 to 1930, the book unveils a virtual world made up of paper cut-out animations. Playing with folded paper and bygone graphical references, the physical and virtual worlds merge into one coherent experience. Created in the framework of an ECAL diploma project, it received the Pierre Bergé Prize in 2008.

▶ **TATTOOAR**

MARK MUSSLER, HAPPY PETS, THIBAUT BREVET, CEM SEVER (CH/F/TUR, 2011-2013)

Three tattooists acknowledged for their graphic talent were invited by Cem Sever to create a tattoo, which comes alive in front of a digital mirror. This installation questions your identity through the symbolic strength of the tattoo – an image inlaid in your very flesh. Here the tattoo takes on a life of its own – its partly virtual nature enables it to evolve over time. The relationship between the durability of the physical object and a possible evolution of its expression, content and meaning is a key topic, including for our body.

ABOUT

EPFL+ECAL Lab

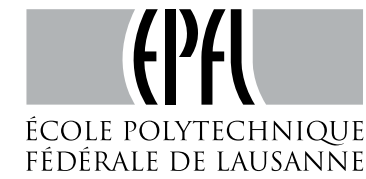
Founded in 2007, the EPFL+ECAL Lab is a unit of the Ecole polytechnique fédérale de Lausanne (EPFL), located on the premises of its founding partner ECAL/University of art and design Lausanne. It cooperates on a regular basis with several top design schools such as the Royal College of Art (London), ENSCI-Les Ateliers (Paris) and Parsons the New School for Design. Its mission is to explore the prospects of technologies emerging from research labs and to open up new fields of action for designers. The EPFL+ECAL Lab offers various training modules and conducts numerous projects with industrial partners.

CVLab (EPFL)

CVLab is a laboratory of the Ecole polytechnique fédérale de Lausanne established in 2002. Its field of research is Computer Vision a computer science discipline whose ultimate goal is to emulate the human brain's ability to interpret images, and therefore to perceive the world through visual stimuli.

EPFL

EPFL is one of the two Swiss Federal Institutes of Technology. It has three core missions: training, research and technology transfer. With over 350 laboratories and 11,500 people on campus, EPFL is one of Europe's most innovative and productive scientific institutions. Ranked top 3 in Europe and top 20 worldwide in many scientific rankings, EPFL has attracted the best researchers in their fields. The School's unique structure fosters trans-disciplinary research. It continuously combines fundamental research and engineering, embodied by the iconic Rolex Learning Center designed by SANAA, voted best public building of the year 2011.



COMPUTER VISION AND DESIGN

Augmented Reality does not escape the paradox of electronic media: the technology must be so powerful that it becomes invisible. The designers' work presented in this exhibition is based on scientific research by pioneers of Computer Vision such as Julien Pilet, Vincent Lepetit and the EPFL Computer Vision Laboratory (CVLab) led by Professor Pascal Fua. The principle of Augmented Reality is as follows: a camera films the scene, a computer analyses the image to tag a specific object and add virtual content to it, and a screen displays the object augmented with images, texts or animations in real time. The main technical challenge is to recognize the object to be augmented almost instantly and with high reliability. During the years 2000, Julien Pilet and Vincent Lepetit established principles to make this possible without tagging the objects with highly visible markers, such as QR codes. This means that, for the user, objects remain intact and no artificial mark disrupts the relationship between the physical and virtual worlds.

Gimme More goes beyond the scientific definition of AR, linked to the visual recognition of a specific object. Under the leadership of the engineering team at EPFL+ECAL Lab, Gimme More also explores other technological principles to produce similar effects using peripheral devices such as Kinect, infrared pointers or motion tracking.

Today, AR has reached a first stage of technological maturity, despite some limitations such as variable lighting, low-contrast image recognition or 3D rendering issues. Although scientific research offers more and more solutions to provide even greater creative freedom, designers also propose additional responses based on human perception and emotions. Science and design must join forces to enable Augmented Reality to open up new worlds, where the material and the immaterial interact in an unprecedented dialogue.

CREDITS

Project Curator	Nicolas Henchoz, EPFL+ECAL Lab EPFL - Ecole polytechnique fédérale de Lausanne
Designers	Thibault Brevet / Thomas Eberwein / Happypets, Vincent Jacquier / Liron Kroll / Marc Mussler Camille Scherrer / Cem Sever / Yuri Suzuki
Project Engineer	Daniel Tamburrino
Research Partner	Computer Vision Laboratory EPFL / Professor Pascal Fua
Scientists	Dr Julien Pilet, Dr Vincent Lepetit
Exhibition Design	SOFTLab
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NY Project Direction	Laetitia Wolff; futureflair
Technology Partner	Space 3D Solutions

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