HELLO WORLD
CODE AND DESIGN

UTS GALLERY
JULY 24–SEPT 14 2018
CURATED BY
AARON SEYMOUR

UTS ART

A2-Type
Aaron Koblin
Alterfact
Ben Fry
Ben Roberts
Defense Distributed
Golan Levin
Helen Yentus
Iris Van Herpen
Josh Roseberg
Kouhei Nakama
Leah Buechley
Pinaffo-Pluvinage
Reinoud van Laar
Shawn Sims
Shih Wei Chieh
Stakker
Takashi Kawashima
Tristan Perich
Universal Everything
Unyq
Victor Doval
Wang & Söderström
Ying Gao
Zeitguised


In 2014, teenager Adrianna Mitchell sat at a keyboard with Barack Obama and helped him become the first US President to code. His modest effort, a mere 17 characters of script*, underscored a deeper belief in coding as the literacy of the 21st Century. Once largely viewed as an esoteric and tangential activity, coding has emerged as an essential, world-making practice. But what will this digitally-driven future look like? Are today's school children destined for lives as software engineers, or will coding become a more diffused set of practices? What does it mean 'to code'?
Hello World addresses this question in the context of design, showing designers printing, sewing, assembling and hacking in order to free computation from the computer's dark interior. In the process of prising open the lid on modern technology, these makers are experimenting with new ways of being digital. With new-found capacities to sense and respond, the material world is becoming increasingly fertile, profoundly reshaping our social, political and economic lives. Additive manufacturing techniques mean once invisible and immaterial processes are emerging into the tangible world of objects. Low-cost electronic components, and the physical computing and maker cultures they've spawned, now see computation affecting everything from toys and weapons to how we work and what we wear.
For contemporary design, code has become an important new concern, at once a tool, a material, and a process in the experience and formation of worlds.

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*Move Forward(100);

After the Avalanche

Tom Lee

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How can we give tangible meaning to the great, pervasive, yet difficult to describe changes that have been wrought on the globe due to the growing abundance of digital technology?

Metaphor and history are often good ways to begin. The philosopher of science Ian Hacking famously used the metaphor of an avalanche to describe the nationwide counting processes which began in the early 19th century. Hacking's memorable phrase "the avalanche of printed numbers" describes one of the key antecedents to the digital transformations of the twentieth and twenty-first centuries. For the first time in history, large-scale populations were translated into statistical information, which could then be arranged in systems, and systems of systems, and systems of systems of systems…

But is the avalanche the best way to describe the ubiquity of number, in all its various forms, and its impact on our lives?

In the introductory chapter to Living by Number: In Defence of Quantity, Steven Connor proposes an alternative. Rather than interpret Hacking's avalanche as "some uniform, indeterminate substance, like mud or snow, under which one may be crushed or asphyxiated" Connor suggests that number, and the systems of reduction, multiplication and organisation it enables, is more generatively and adequately understood as something with a great diversity of meanings and affects.

Hello World: Code and Design is an exhibition that goes some way towards showing why the avalanche is only part of the story. The works included in the show are an expression of what happens once the snow has settled or perhaps even melted; a vision of a time when the displaced forms begin to be reincorporated into a new vision of the landscape.

For thirty years or so the world has been stuffed into the internet and the interface of the screen, now we are witnessing the first inklings of what happens once it starts to overflow.

The translation of objects into code and then back into objects does not leave the associated systems of production, consumption and distribution unchanged. The on-demand possibilities enabled by computer aided design software and 3D printing have the potential to transform our relationship with objects in the same way streaming services such as Spotify and Netflix have changed our relationship with music and television.

In this sense, a return to the physical is perhaps one of the more surprising developments in contemporary experimentation with code. There is a strong emphasis on the book within Hello World, with works by Joshua Roseberg, Ben Fry, Matt Pyke, Helen Yentus and Studio Pinaffo Pluvinage all focusing on this form. Free from some of the fizz which is associated with contemporary information delivery systems, we can appreciate the book as an object of design that is at once open to transformation and free from many of the revolutionary claims or propositions about future technologies that often act as substitutes for rigour.

Compared to computing technologies, printed books seem thoroughly analogue. However, the changes initiated by the printing press in the 15th Century are in a sense a digitalisation of earlier communicative technologies and practices associated with oral storytelling and cursive script. Matt Pyke's redesign of Composition No.1, an experimental novel by French writer Marc Saporta, originally published in 1961, features loose pages that each tell a discrete narrative and are able to be rearranged in any order. In each new sense, Saporta's novel prefaces some of the key affordances of digital technology. Narratives have always had an implicit sequential element, but the idea of cutting up and reordering a story, or playing one in reverse for that matter, doesn't really become a meaningful possibility until numbers are used to make explicit the way narratives are ordered at more granular level, whether through page numbers or frames sewn together in film. Systems of ordering and equivalence in this sense engender rather than inhibit openness and experimentation.

Pyke's intervention into Saporta's novel breaks the narrative down even further, focusing on individual letters as discrete units of information. In Pyke's work, letters are subjected to series of algorithmic operations, producing waves, swarms and clouds. These forms, which are typically associated with dynamically evolving, unpredictable events, remind us that while breaking something down into its constituent units may destroy the way meaning operates at one level—in this case, the meaning associated with a chronological, episodic narrative—on another level it, opens up the possibility for complex form generation and new kinds of meaning.

Unique Board are an illuminating example of a company using 3D printing to run smaller batches of products that are commercially riskier. The company uses Instagram as channel to initiate collaborations on 3D printed sculptures with artists and creatives who are doing interesting work. The number of sculptures produced is limited by set period of three months. Time rather than quantity that primarily determines production.

While it might be tempting to focus on the more glamorous and revolutionary possibilities associated with technologies such as 3D printing, their production model exemplifies the ways in which our dynamically evolving, socio-technical ecology is influencing cultural expression, consumer products and production. The business model of Unique Board is contingent on multiple technologies, such as the camera enabled smartphone, image sharing services, computer aided design and 3D printing, not to mention the distinctive cultures of sharing that have both enabled and been enabled by different digital networks.

Similar sentiments are at work in Golan Levin and Shawn Sims' open source project Free Universal Construction Kit (F.U.C.Kit), a design in which Gottfried Leibniz's dream of a universal language goes some way to being realised, only now it is the grammar of objects that is being transformed. Levin and Sims redesigned the components used in various systems of children's building toys, such as Lego, Duplo and many others, so they can be can be connected and used in the same, unified system. It might be tempting to see this as reductive, but that would be to follow the same line of thinking that regards the avalanche as the end point. The users and communities who discover the possibilities afforded by the new material syntax will in the end determine whether the design ought to be equated with a reduction or enlargement of possibilities. If the works curated in Hello World are any indication, we can expect the gradual thawing that comes after the avalanche to promote the growth of some fascinating and diverse new forms.

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A2-Type (Scott Williams, Henrik Kubel)

United Kingdom

A23D, 2014

3D printed letterpress font

Letterpress, the process of printing using moveable wooden or metal blocks, was developed in Europe by Johannes Gutenberg in the 15th Century. By enabling the mass printing of the written word it spearheaded the world's first information revolution and the development of widespread literacy. Largely made redundant in the 20th century by offset printing, letterpress has been revived in recent years as a bespoke process that is valued for the tactile quality of its prints.

New North Press is an artisan letterpress print and design studio based in London. In 2014, it commissioned A23D, a computer modelled and 3D printed typeface that now sits conspicuously alongside the studio's collection of 700 wood and metal block fonts, ushering an anachronistic technology into the 21st century.

Includes short video presented on iPad that can be viewed online.

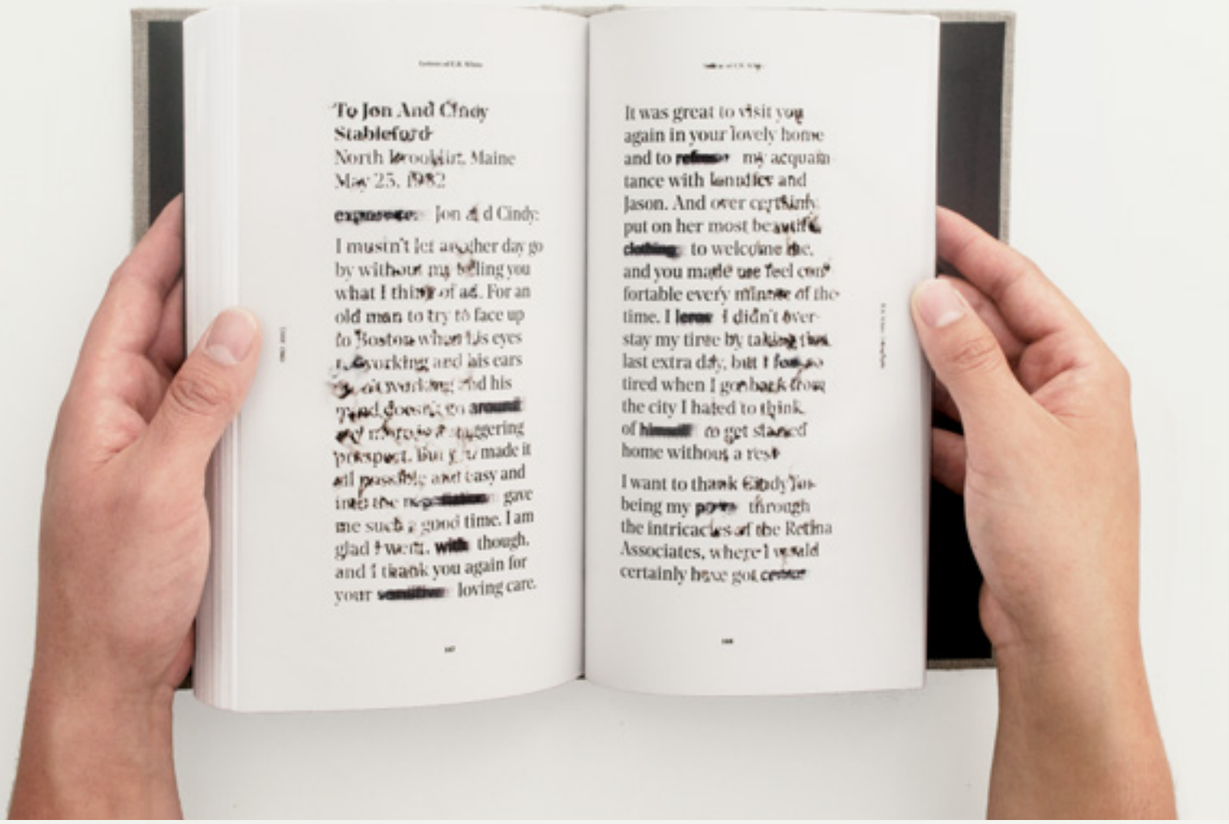
Also included is accompanying letterpress poster designed by A2-Type and printed with the A23D typeface.

Helen Yentus
United States
On Such a Full Sea, 2013

Book with 3D printed slipcase
Edition of 200

Death by Kindle has long been foretold as the fate of the traditional book, yet surprisingly printed titles continue to maintain their market share. In a world increasingly mediated by screens, audiences apparently still yearn for the tactile and sensual.

Somewhat ironically then, Helen Yentus' limited edition design of On Such a Full Sea aims to invigorate the objectness of the book through digital means. The conventionally produced volume emerges from a slipcase 3D printed with a cornstarch derived bioplastic. A collaboration between Yentus and printer manufacturer Makerbot, each of the 200 slipcases took 20 hours to output.



Josh Roseberg
Australia
Letters of E.B. White, 2016

Inkjet printed book with blind embossed text

Roseberg's design of Letters of E.B. White is a poetic meditation on fallibility, not only of human memory and perception, but of the software algorithms that increasingly regulate our lives.

Best known as the author of Charlotte's Web, E.B. White suffered debilitating Alzheimer's. In this presentation of his collected letters, designer Josh Roseberg visibly charts the progress of the disease in the book's increasingly distorted typography.

Dementia is a diminishment of the mind through forgetting, but also mis-remembering. To replicate this disorienting and complex process of loss, Roseberg wrote a simple script to interface with Google's translation tools, feeding selected words through several languages and then back in to English. These 'mis-remembered' words appear with increasingly frequency throughout the book, obscuring the barely perceptible traces of their original.

Universal Everything (designer), Visual Editions (publisher)

United Kingdom

Composition No.1, Published August 2011

Box with 150 loose pages

Composition No.1 is an experimental novel by French writer Marc Saporta. First published in 1961, its unbound pages are designed to be shuffled and read in any order. As the first ‘book in a box’ this format’s radical form anticipated the nonlinearity so characteristic of contemporary digital media.

In this reissue, designed by Universal Everything’s Matt Pyke, the book’s text further disintegrates, driven by invisible forces to swarm and coalesce across the rear of each page. These typographic clouds were created with code written in the open-source Processing programming language.

Ben Fry
United States
The Preservation of Favoured Traces, 2009

Print on demand book

In 2001, along with Casey Reas, Ben Fry released Processing, an open-source programming language designed to promote software literacy within the visual arts. Processing has since become a key production tool in the fields of design, arts and architecture.

In The Preservation of Favoured Traces, Fry uses the Processing programming language to identify variations across the six editions of Darwin's Origin of the Species. By colour coding each word based on the edition it first appeared in, Fry visualises the genealogy of Darwin's developing ideas on natural selection. The resulting publication presents Darwin's treatise, not as the solidification of a static concept, but as the dynamic emergence of a complex and world changing idea.

Blackboxing

From fingerprint recognition to wi-fi enabled kitchens, code and computation are now integrated into our daily life so rapidly that they quickly recede from our awareness. Philosopher Bruno Latour calls this process, whereby ‘scientific and technical work is made invisible by its own success’, blackboxing.
The swiping gesture and the binary choice it offers, the act of ‘liking’ social media content, and the evolution of the phone as our primary digital device, are all examples of things that now seem wholly natural and inevitable, rather than designed.

Design plays a central role in blackboxing, crafting experiences that are ‘seamless’ and objects that hide their inner workings behind polished surfaces. While user-friendliness may be the objective, the result is that the technological processes that define contemporary life are often kept out of sight and beyond scrutiny.

When technology goes unnoticed we lose the capacity to reflect upon its purposes and effects. Many of the designers in Hello World demonstrate alternatives to passively adopting the postures imposed upon us by the convenience of these technologies. By developing their own tools, tinkering with existing ones, or through making visible the hidden workings of our black boxed lives, they remind us of our agency in an increasingly mediated world.

Tristan Perich

United States

1 Bit Symphony, 2010

Noise Patterns, 2016

CD jewel case, steel, electronic components, batteries

Despite mimicking the appearance of conventional CDs, 1-Bit Symphony and Noise Patterns are not musical recordings. Instead, each is an assemblage of electronic components—battery, power switch, microprocessor and headphone jack—that, when switched on, synthesise code into musical compositions in real time.

Both projects derive from Perich's interest in the aesthetic constraints of 1-bit audio (think alarm clock tone) and the increasing dematerialisation of music through streaming and digital downloads. In these works, Perich foregrounds the material components of electronic music, 'making an intimate connection between the materiality of hardware and the abstract logic of software.'

Tristan Perich

United States

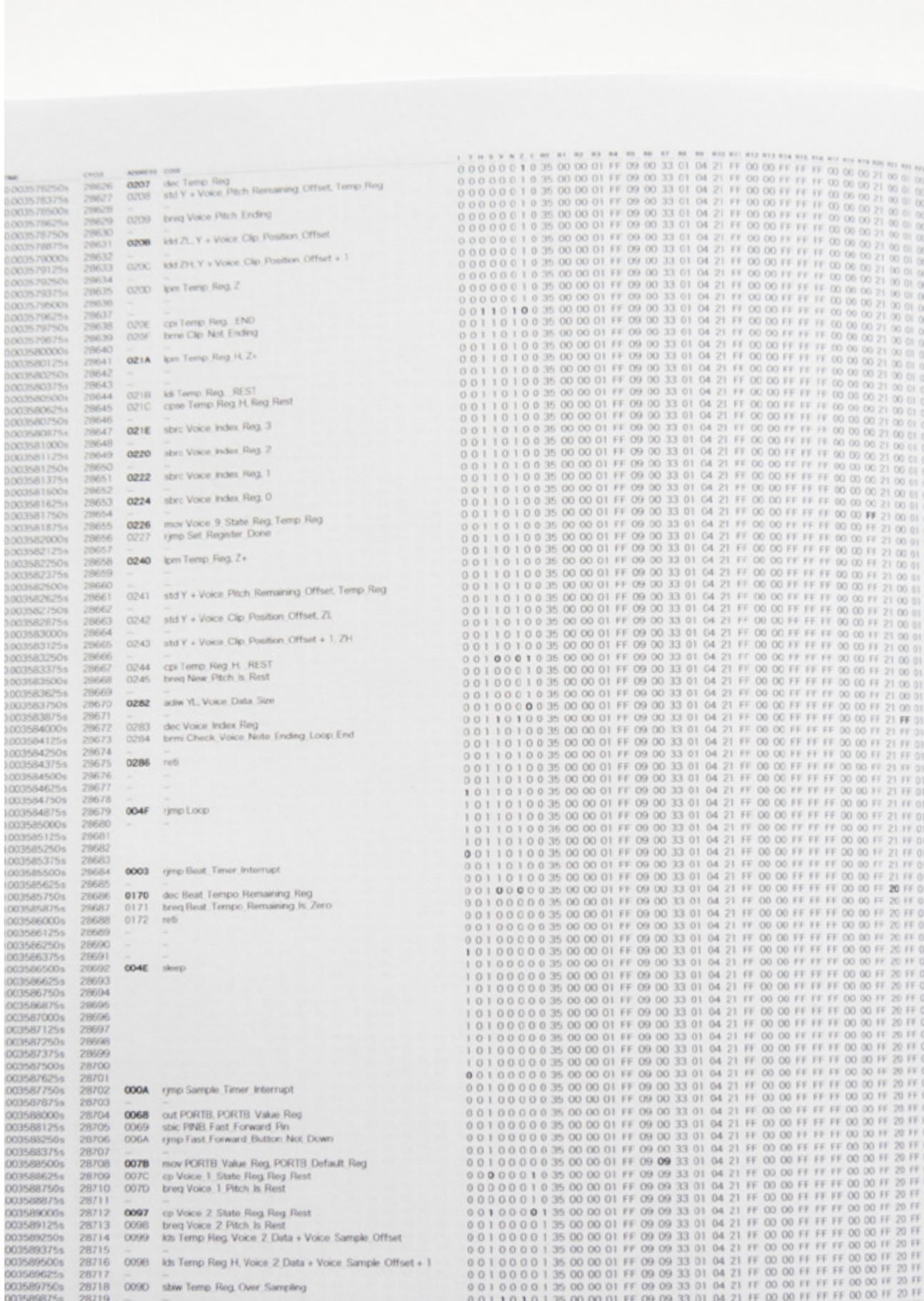
0.01s: The First 1/100th Second of 1 Bit Symphony, 2015

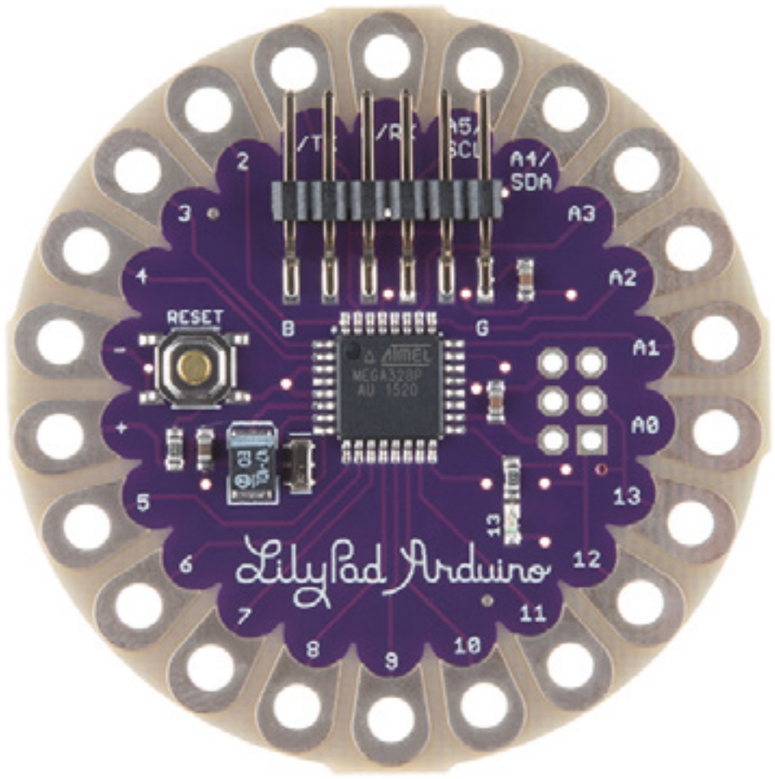
Book

Tristan Perich's 0.01s reproduces the invisible operations carried out by the microprocessor powering his 1-Bit Symphony. Documenting only the first hundredth of a second of the performance, the book focuses our attention on the unimaginable speed at which modern computers operate, rapidly overwhelming our powers of comprehension.

In the blink of an eye the ATTINY85 chip, available for a few dollars on eBay, executes 80,000 computational cycles, filling the 695 page book with an avalanche of numbers.

0.01s also documents the complete source code of 1-Bit Symphony, its memory contents, and the instruction set that defines the core commands Perich used to program its music. By visualising these processes on paper, Perich 'brings us face to face with the internal mechanics of digital technology'.





Leah Buechley
United States
Lilypad Ardunios, 2007

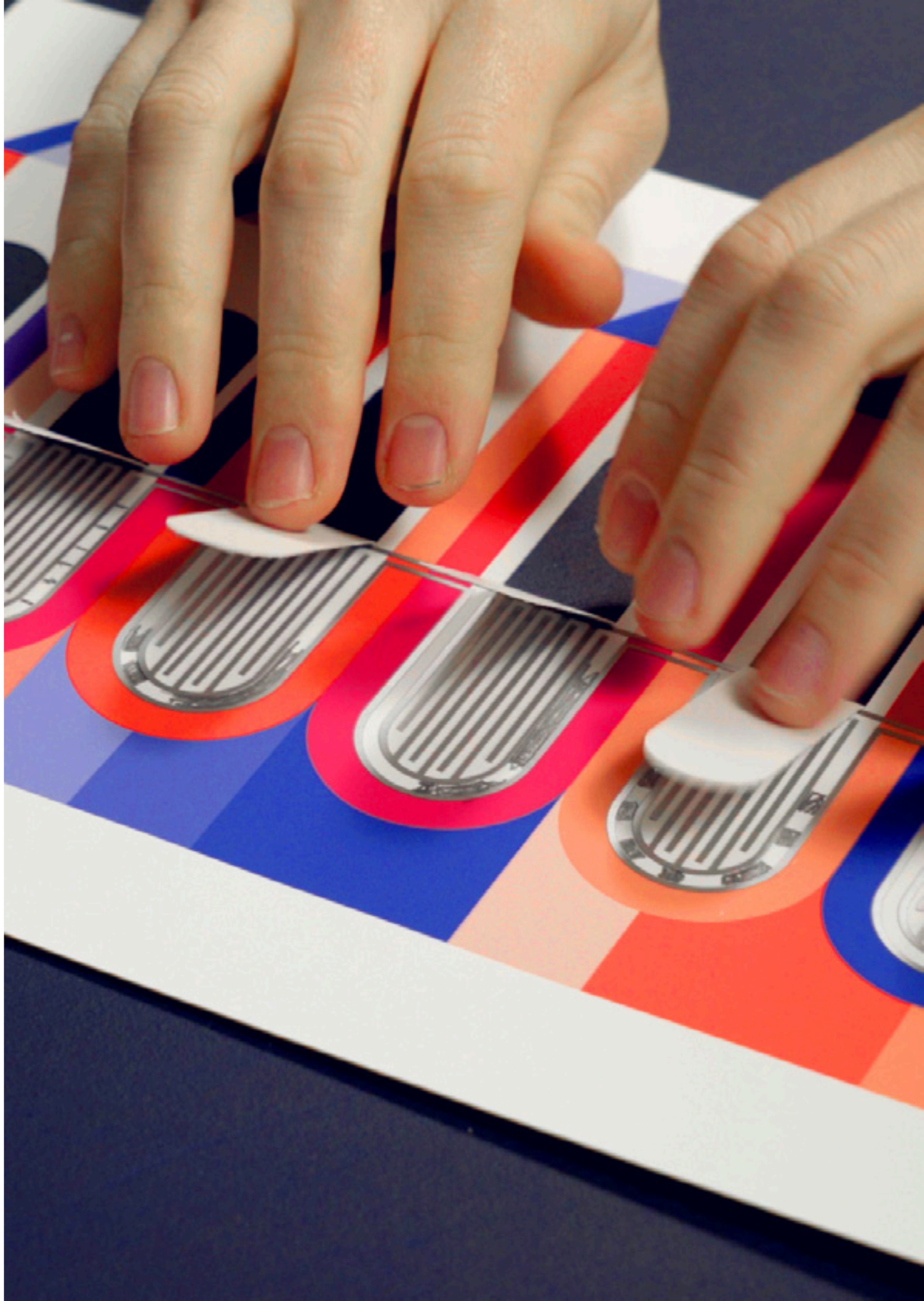
LilyPad Arduinos are wearable e-textiles (electronic textiles) developed by Leah Buechley and cooperatively designed with SparkFun. Sewable electronics combine traditional craft processes (sewing, fashion design and textile design) with electrical engineering, computer science and hardware skills. With sewable electronics you can create washable, wearable and responsive electronic textiles and accessories.

Pinaffo Pluvinage
France
Papier Machine, 2018

Paper, conductive ink, metallic ball, battery, piezo speaker

A book that assembles into six electronic toys, Papier Machine is designed to make visible the hidden mysteries of computation. Printed in fluorescent colours and silver conductive ink, the project foregrounds the normally invisible aesthetics of electronic circuits. Through playful interactions—blowing, drawing and balancing—children complete these circuits, prompting electrons to flow, lights to blink, and tiny speakers to emit expressive low-fi beeps and whistles.

Includes short video presented on iPad that can be viewed online.



Iris Van Herpen

The Netherlands

Dress and ‘Aero’ shoes, ‘Lucid’ collection, Autumn/Winter 2016-17

Laser cut acrylic, tygon tubing, wool

Digital fabrication is often presented as an effortless process through which complex objects emerge fully formed from a printer. However the reality of 3D printing is closer to the processes of artisanal craft than those of automated industrial production.

Dutch fashion designer Iris van Herpen is known for her pioneering use of 3D printing in clothing design. For this dress she collaborated with architect Philip Beesley, using parametric software to translate the fluid forms of the body into a hexagonal geometry of laser cut acrylic. Joined with translucent plastic tubes, the hundreds of acrylic pieces in this dress were painstakingly assembled by hand. Van Herpen draws her inspiration from nature, her clothing suggestive of a post-industrial world where the technological and organic have been fused into sensuous new forms.

Lent by the Museum of Applied Arts and Sciences, Sydney. Purchase with funds from the Museum of Applied Arts and Sciences Foundation, 2016.

Network Aesthetics

If Modernist design was enthralled with the machine and its associations of speed, efficiency and functionalism, today's dominant metaphor is the network, at once ubiquitous and invisible. Its visual leitmotifs of node-based geometry, visual complexity, translucency and reflection, appear frequently in contemporary design, from architecture to product design.

These tropes partly result from the affordances of digital design and production. The intricacy and variability of works such as Iris van Herpen's Lucid dress and Unyq's scoliosis brace, are made possible by code-based designing and digital fabrication. By appearing explicitly technological, such objects makes a case for the centrality, power and seductiveness of technology in contemporary life.

Shih Wei Chieh
Taiwan
I Am Very Happy I Hope You Are Too, 2013

Conductive threads, LEDs, integrated circuit, embroidery, wood

Shih Wei Chieh produced this headdress as part of a textile research residency in Oaxaca, Mexico. The interweaving of flexible circuits and traditional textile practices finds surprising parallels in the aesthetics of each medium. Wei had worked with Taiwanese weaving communities, using technology to 'explore the relation between traditional weaving techniques, society and new materials'.

The integrated electronics display a letter Wei received from home while working in Mexico, infusing the neon glow of the LEDs with poignancy and nostalgia.

Alterfact
Australia
Collapse, 2015

3D printed Southern Ice porcelain

Alterfact is a Melbourne based design studio whose current practice focuses on the 3D printing of clay. These early experiments explore the ‘myriad limitations, failures and collapses that occur as data is translated into physical form’. Though digitally defined, these forms are not immune to the forces of the material world; they collapse, twist, buckle and slump in upon themselves in unrepeatable ways.

A ‘taxonomy of failures’, these vessels find their own serendipitous and idiosyncratic beauty, calling into question the ideas of perfection and reproducibility that is often associated with digital processes.

Alterfact

Australia

Handbuilt/Machinebuilt, 2015–2018

Unfired terracotta and 3D printed Southern Ice porcelain

In this work Alterfact have digitally reproduced a hand-moulded terracotta form. The original was scanned and the resulting digital facsimile 3D printed in clay.

Handbuilt/Machinebuilt reveals the different material gestures produced by body and machine. The soft imprints of fingers and scale of the human hand are overlaid in reproduction with the particularities of software and mechanical processes. By pairing digital fabrication techniques with the handmade, Alterfact reveals the bias of digital operations and the ways they actively reshape the materials to which they are applied.

Reinoud van Laar
The Netherlands
Fluid Leaves, 2015

Printed paper cups

In this brand investigation for Xian tea boutique Tea & Cupp, Reinoud van Laar has simulated the mathematics of natural systems to create a dynamically generative visual identity.

The abundant diversity of leaf shapes that appear in nature often share underlying geometric rules. Van Laar developed a custom software program that replicates these, allowing him to randomly generate a multiplicity of virtual leaves. A fluid dynamics algorithm then dispersed these leaves into a variety of graphic patterns. This approach, combined with variable data digital printing, made it possible for every cup to feature a unique, yet aesthetically consistent, design.

Kouhei Nakama
Japan
Makin' Moves, 2017

Video. Duration 02.30

Zeitguised
Germany
OY—A New Planet Is Born // Void season, 2016

Video. Duration: 03.58

In these two videos the physical body is transformed into the materiality of code, digital stuff that can be shaped and sculpted at will.
In Makin' Moves people are 3D scanned into virtual figures, sliced, warped, stretched, and endlessly multiplied through generative and particle based algorithms.

In contrast, Zeitguised have digitally captured movement. The dynamic motions, arcs and rotations of the body are transcoded onto abstracted fabrics, distorting under exertions of software-generated collisions and gravity.

Both refigure the constrained world of flesh into something both joyful and uncanny: bodies freed their own limitations.

Stakker

United Kingdom
Mark McClean and Colin Scott (visual imaging), Brian Dougans aka Future Sound of London (music), Marek Pytel (executive producer)
Stakker Humanoid, 1988

Video. Duration: 05.04

Stakker Humanoid is a seminal music video that captures the energy and drug-fuelled synesthesia of the late 80s rave scene. Its combination of analogue film processes and digital sampling techniques was groundbreaking, establishing an aesthetic of frenzied graphic density that has now become commonplace.

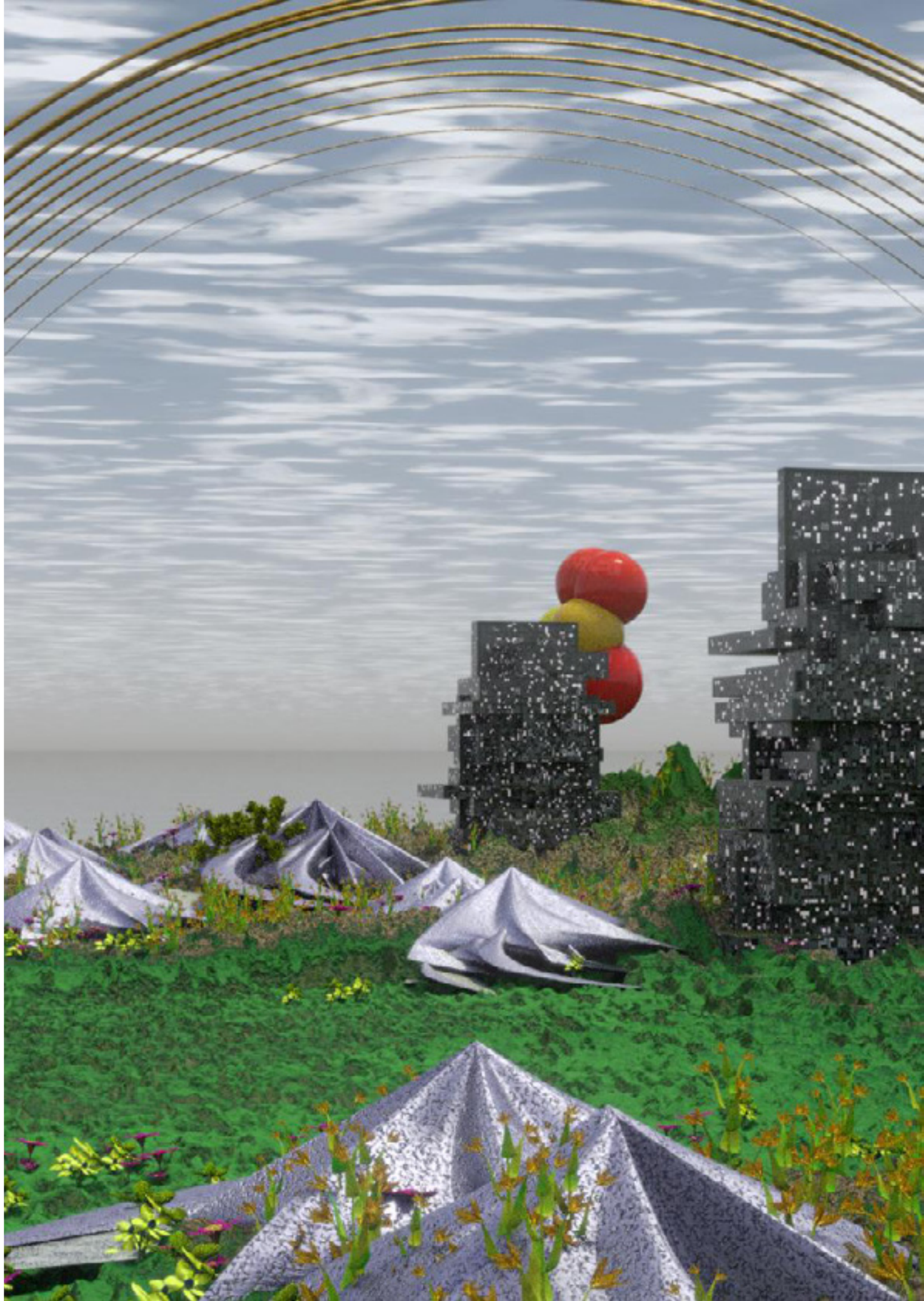
Begun as an art college project of 35mm film loops and hand drawn graphics, the project advanced when Stakker secured the loan of a Fairlight CVI, an early video synthesiser developed in Australia. The result was Eurotechno, a 30 minute video art piece produced for Virgin Records. The cut down version on display here was released as the single Stakker Humanoid, becoming a top 20 hit across Europe.

Victor Doval
Spain
Howler Monkey by Meier & Erdmann, 2017

Video. Duration: 04.32

Doval created this work ‘parametrically’. Rather than manually animating the video’s various elements he created a suite of visual parameters—geometries, materials and lighting. Each of these was assigned to a specific sound frequency that visually activated them as the music progressed.

This method of animating is more akin to orchestration, with the designer relinquishing aspects of control and decision making to software processes.



Wang & Söderström (designers), Unique Board (manufacturer)

Denmark/Sweden

Excavation I, II, III, 2017

Full color 3D printed plaster, resin

One of the utopian promises of 3D printing is a future in which manufacturing has moved from the factory to the home with domestic printers producing customised objects on demand. While such visions have yet to materialise, digital fabrication technologies are already disrupting conventional models of mass production.

Sensing the possibilities this offers, Unique Board have established an innovative business model producing limited edition print-on-demand art objects. Using Instagram as a channel to source emerging designers, Unique Board works with these ‘influencers’ to shepherd their ideas through digital production. Notably, the editions of these objects are restricted, not by number as is conventional with artworks, but by time, each piece being offered for sale in unlimited quantities for a set period of 90 days.

Unyq
United States
Scoliosis Brace, 2015

3D printed resin prototype

This scoliosis brace by prosthetics manufacturer Unyq is 3D printed on demand to meet the precise measurements of its wearer. Breathable due to its perforated form, its slim profile also makes it unnoticed beneath light clothing.

As well as adjusting for fit, Unyq's production model allows clients to choose among a wide range of design variables, enabling users to customise a prosthesis that fits their personal style as well as their body.

Ying Gao

Canada

possible tomorrows, 2017

Interactive clothing with fingerprint recognition technology. Nylon mesh, Super organza, Nylon thread, PVDF thread, thermoplastic, electronic devices. Video. Duration: 01:22

Incertitudes, 2013

2 interactive garments. PVDF, dressmaker pins, electronic devices. Video. Duration: 01:01

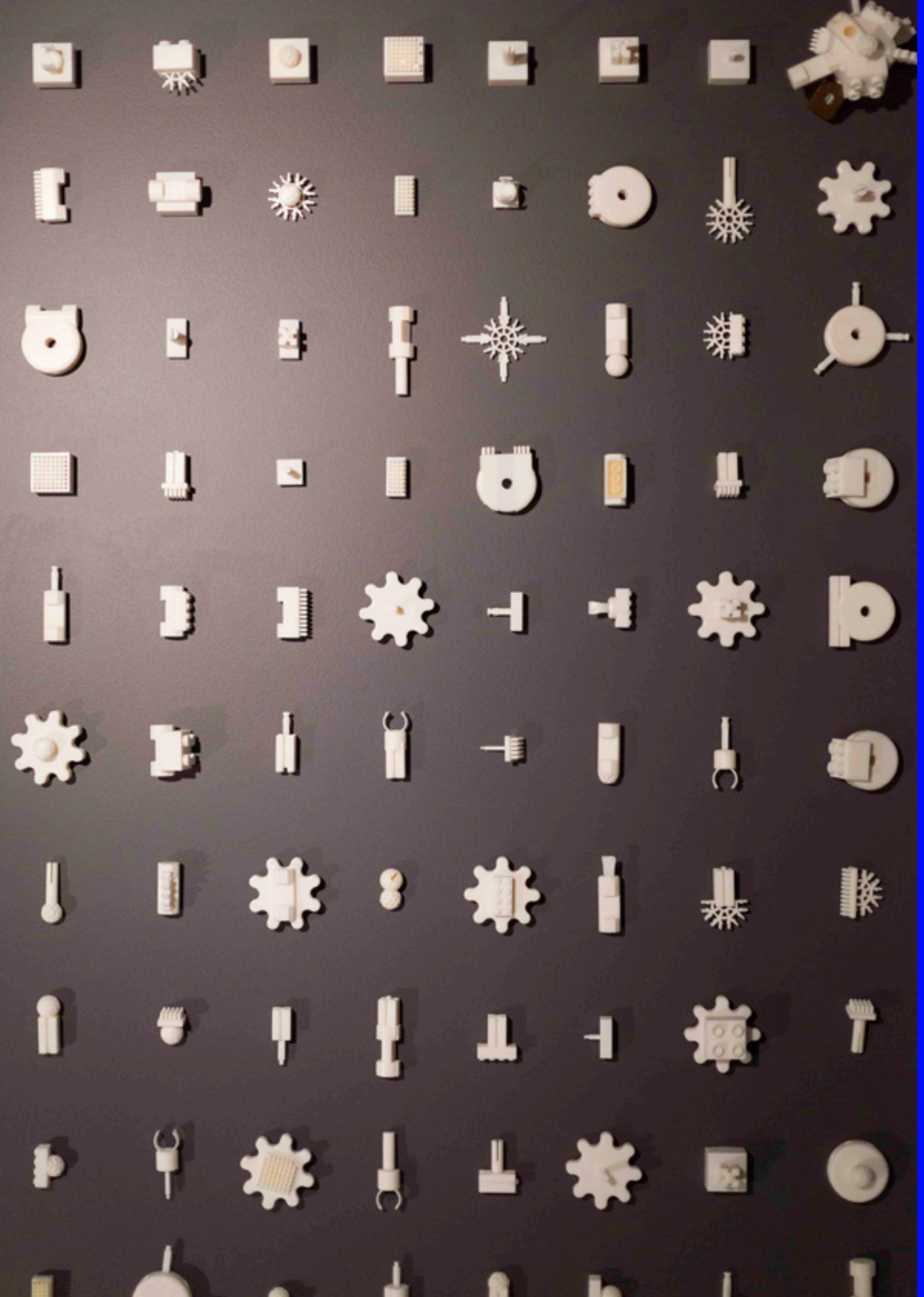
Neutralité : Can't and Won't, 2016

2 interactive dresses. Super organza, cotton mesh, PVDF, electronic devices. Video. Duration: 01:55

Many commercial applications of wearable technology treat the body as a machine, embedding it in a regime of monitoring, assessment, and control: 'Have you reached your 10,000 steps today?'

Ying Gao's designs are concerned with a different kind of performance: the intimate and subtle interactions between the body, clothing, and onlooker. The two robotised garments in Possible Tomorrow's are connected to a fingerprint recognition system. However, through bypassing the notion of security, they only become animated in the presence of strangers whose fingerprints aren't recognised by the scanner. Can't and Won't react according to a facial expression recognition system and stop moving as soon as the on-looker begins to emote, while Incertitudes is activated by the spectator's voice.

Expressing a softness not often associated with electronics, they sense and respond to the body's material traces—fingerprints, voice, and face—suggesting a future where technology is not just smart, but sentient.



Information Wants to be Free

The connection between computing and anti-authoritarianism can be traced back to the birth of the personal computer during the 1960s counterculture. Digital technologies are often presented as inherently democratising: from the David and Goliath battle between Apple, Microsoft and IBM, to open source approaches to software, the networked promise of the web, and the use of social media in the Arab Spring.

The emancipatory effect of technology is a recurring refrain in narratives around the digital, but the disruptive effect of code is a double edged sword; it has the potential to both democratise, and hold to ransom.

Golan Levin, Shawn Sims
United States
Free Universal Construction Kit, 2012

3D printed digital models

The Free Universal Construction Kit (F.U.C.Kit.) applies the open source philosophy developed in the world of software to objects. Designed as a set of 3D models that can be freely downloaded and printed, the 79 oddly familiar parts that make up F.U.C.Kit. allow children to playfully connect parts from differing building systems: Lego, Duplo, Fischertechnik, Gears! Gears! Gears!, K'Nex, Krinkles, Bristle Blocks, Lincoln Logs, Tinkertoys, Zome and Zoob.

Levin and Sims describe the project as 'reverse engineering as a mode of cultural practice'. While F.U.C.Kit.'s interoperability is a small intervention into capitalism's closed and proprietary systems of manufacture, the kit points toward a commons based future where objects are designed, owned and manufactured collectively.

Defense Distributed
United States
The Liberator, 2013

3D video representation of the 3D printed gun

The Liberator is a 3D printable gun created by Cody Wilson, a Texan libertarian and second amendment advocate. Wilson's organisation, Defense Distributed, makes weapons available as software; utilizing commons licensing and 3D printing to allow consumers to manufacture weapons in the 'comfort and privacy' of their own homes.

Although Wilson and others have successfully tested the gun, its inaccuracy and tendency to explode means it is more likely to kill the one firing than its target. But, this misses the point: the Liberator is intended more as manifesto than a workable firearm. Wilson's interest is also in digital technology's emancipatory potential—its capacity to loosen the grip of government regulation on citizen's freedoms.

Under Australian law, downloading 3D files of firearms carries a maximum 14 year prison sentence. On display is an animated interpretation of The Liberator.

Ben Roberts
United Kingdom
Interior of Amazon Fulfilment Centre, Rugeley, 2012
Motivational poster #2, Rugeley, 2012
From the series “Unpacked”

Photographic prints

Ben Roberts Unpacked series documents the unsettling, dystopian beauty of Amazon’s Ridgely warehouse, one of 16 throughout the UK.

These Orwellian named ‘fulfilment centres’ are frequently built in areas of low employment and high social disadvantage, often after being granted generous concessions by governments eager to bolster the local economy. Workers, largely employed on zero-hour contracts, walk up to 24 kilometers per shift, crisscrossing a warehouse the size of 15 football fields to undertake tasks Amazon has yet to automate. ‘Inefficient’ activities such as talking and toilet breaks are discouraged, with employees reportedly urinating in bottles to save time and meet packing quotas.

Digital Taylorism

Amazon's global dominance is built upon its genius at using digital technologies to extract efficiencies across all aspects of its business. Pioneering the one-click transaction in 1997, Amazon's most recent innovation in seamless purchasing is the Dash. These five dollar wi-fi enabled devices allow customers to reorder products at the touch of a button; simply click and the product is ordered, payment is charged and, if you have signed up to Amazon Key, a delivery is made inside your home by a worker who remotely unlocks your front door.

But the instantaneous and frictionless logic of these transactions, and of tech companies such as Apple, Uber and Airbnb, play out in the real world in decidedly abrasive ways. Projects such as Ten Thousand Cents underscore the challenges of the contemporary gig economy, renewing a critique common to the rise of industrial capitalism in the 19th century, where manufacture was divided into separate tasks meted out to different workers in a strategy designed to increase productivity. Now workers across the globe remain anonymous and isolated behind their usernames, performing tasks for large corporations, with little scrutiny of work practices and wages.

These new economy businesses reshape the world in their image, using their economic power to skirt regulation, exploit labour, outsource tax liabilities to favourable jurisdictions, and reshape laws affecting areas as diverse as energy, housing, data privacy, and airspace regulation (Amazon is hoping to launch delivery by drone by 2019). Low cost, it seems, comes at a price.

Amazon

United States

Amazon Dash (AmazonBasics Batteries, Dingo, Fuji Water, Glad, KY, Pampers, Pringles, Red Bull, Tylenol), 2015

Wi-fi enabled button

Amazon’s Dash is an example of the burgeoning Internet of Things (IoT); consumer items made ‘intelligent’ through wifi connections to the Internet. Convenience products like the Dash are a striking example of the diffusion of computation into the fabric of everyday life.

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FOR ALL DEBTS, PUBLIC AND PRIVATE

Anna Escobedo Cabral

Treasurer of the United States.

H2

SERIES
2003
A

H52

Secretary

FRANKLIN

Aaron Koblin, Takashi Kawashima, anonymous artists
United States
Ten Thousand Cents, 2008

Custom software, variable size

Ten Thousand Cents is a crowd-sourced artwork made up of 10,000 individual drawings. It was created using Amazon's Mechanical Turk (MTurk), an online distributed labour tool where workers can bid to perform 'Human Intelligence Tasks'; menial and often repetitive actions that are beyond the current capacities of artificial intelligence.

Using a custom drawing tool, thousands of individuals working in isolation from one another, painted a tiny part of the bill without knowledge of the overall task. Workers from 51 countries were paid one cent each for their labour, for a total labour cost of $100.

Koblin and Kawashima's stated aim is to explore the 'new and uncharted combination of digital labour markets, crowdsourcing, virtual economies and digital reproduction'.

A23D: A 3D-PRINTED LETTERPRESS FONT
ALPHABET DESIGNED BY A2-TYPE
3D-PRINTED BY CNC KITCHEN STUDIOS
COMMISSIONED BY NEW NORTH PRESS

Adrian Harrison
United Kingdom
A23D: a 3D-Printed Letterpress Font, 2014

A2-Type
United Kingdom
A23D Specimen: D, 2014

UTS ART

Hello World:
Code and Design
Curated by
Aaron Seymour

www.he-llo.world

UTS Gallery
702 Harris St
Ultimo Sydney
NSW Australia

July 24—Sept 14, 2018

Exhibition photography
by Jessica Maurer.

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Museum of Applied Arts & Sciences