

RESEARCH SUMMARY

Unit 3 - MA Graphic Communication Design

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Abstract

The majority of us use computers every day and constantly send photographs digitally at the speed of light, often without considering the systems that make this possible. With this project, I want to appreciate and respect the textile origins of the computer, highlight the parallels between textile and coding logic, and translate something that is usually digital and intangible into a tactile, physical experience. In a fast-paced technological age, I am interested in creating the opportunity to slow down and reflect on the hidden systems that underlay everyday digital communication. My enquiry asks: How can I acknowledge the hidden historical work of the invisible contributors to the computer? And how can I reveal the hidden language behind an image by bringing the invisible data used in digital image transmission into a visible and tactile form?

My enquiry is explored through a studio practice that combines digital and analogue methods. A key approach involves investigating the similarities between knitting and coding, seeing how patterns, sequences, repetition, and logic operate across both disciplines. As a hand-knitter who has only recently begun learning the basics of coding, I was immediately intrigued by the parallels between knitting instructions and programming languages. Both rely on loops, repetitions, abbreviations, and mathematical systems to produce an outcome. This connection forms the basis of my exploration into the shared logic of textiles and computation.

This project is relevant to people working with textiles, coding, and anyone interested in the relationship between technology, craft, and communication. One aspect that has particularly interested me is the lack of awareness, especially outside the field of graphic communication design, of the historical connection between textiles and computing. The project aims to encourage a greater appreciation of both forms of knowledge while recognising their roots in craftsmanship. By making the work tactile and large scale, I want to create an experience that encourages the audience to engage physically with the work, away from screens, and take a moment to reflect on the systems that surround them.

Context

This project explores the often-overlooked relationship between textiles and computing. A key reference point for this project is *The Fabric of Civilization* by Virginia Postrel, which argues that textiles were not simply decorative or domestic objects, but foundational technologies that shaped human innovation. Postrel highlights how textile production required sequencing, counting, pattern recognition, and systems thinking: forms of logic that closely parallel computational processes. Her argument positions weaving as an early form of programming, most clearly demonstrated through the Jacquard loom, whose punch-card system directly influenced early computational logic and later computer programming systems.

This enquiry is also shaped by the hidden systems of digital communication, particularly the underwater fibre-optic cables. These cables form an invisible infrastructure that constantly transmits information across continents through pulses of light. Every time an image is sent digitally, its thousands of pixels are converted into RGB colour values, translated into binary code, and transmitted as light signals through these cables, often within milliseconds. Although this process is fundamental to contemporary life, it remains largely invisible and abstract. I was fascinated by the complexity and speed of this system and it became central to my enquiry: how can something so intangible and instantaneous be translated into a slower, tactile form that makes its process visible?

The practical development of this project was shaped by digital experimentation and technical support from the Digital Lab at Central Saint Martins. Using p5.js, I got help to develop a programme that translates uploaded images into binary patterns. The software converts an image into black and white, pixelates it, reads each pixel's greyscale value (0-255) row by row, translates these values into binary code, and visualises the resulting sequence as black and white pixels (1 = black and 0 = white). This process mirrors the same logic used in digital image transmission through fibre-optic cables, making the invisible computational systems into visible patterns.

The project is also shaped by machine knitting. I worked with a Brother KH-940 knitting machine at UAL, connected to the software DesignaKnit, which allows digital images to be translated into pixels and from there downloaded to the knitting machine, automatically enabling it to be converted into knitted form. This technology reflects the continued relationship between textiles and computation, where historical craft processes are extended through software systems.

Across these contexts: textile history, digital infrastructure, creative coding, and machine knitting, this project sits between analogue and digital practice. It is shaped by an interest in making invisible systems tangible, reconnecting modern computing to its textile origins, and revealing the shared logic that links craft and computation.

ADA DIETZ

Ada Dietz's work is another reference point for my project, as she directly connects mathematical systems to textile production. In her 1949 publication *Algebraic Expressions in Handwoven Textiles*, Dietz developed a method for generating weaving patterns through the expansion of multivariate algebraic expressions. This approach translates mathematical equations into structured weaving schemes, where computation and textile design become inseparable. Her work demonstrates how logic, sequencing, and mathematical operations can be embedded directly into fabric, reinforcing the idea that weaving functions as a form of algorithmic thinking. Dietz's method strengthens the link between coding and textiles, showing how abstract systems can be made material through pattern, structure, and repetition.

</UNRAVEL;> BY IRENE ALBINO AND ELLEN JONSSON

Another key practice informing my project is </unravel;> by Irene Albino and Ellen Jonsson. In this work, a 25-metre knitted essay is produced using a hacked Brother knitting machine, translating text into stitch. The project moves from text to image to pixel to pattern, revealing how coded language can exist as a physical structure. It reframes knitting as a critical, conceptual medium rather than a purely craft-based practice, and demonstrates how digital information can be slowed down and embodied through textile processes. This approach informs my own interest in translating computational systems into tactile forms, where the knitting medium becomes a way of revealing hidden digital logic.

HITO STEYERL'S IN DEFENCE OF THE POOR IMAGE

Another key reference is Hito Steyerl's essay *In Defence of the Poor Image* (2019), which examines the cultural status of low-resolution, compressed, and widely circulated digital images. Steyerl argues that these "poor images" gain meaning through circulation, repetition, and degradation across digital networks. Rather than being worthless, they reveal the hidden infrastructures of digital communication: servers, cables, compression systems, and labour. This perspective is central to my enquiry, as it highlights the invisible journeys images undertake through global systems. My practice responds to this by reintroducing material presence and slowness into digital processes, asking what is gained when data is made physical again, a reflection on the transformation of digital data.

TAVARES STRACHAN

Tavares Strachan's practice operates at the intersection of art, science, and politics, surfacing histories and knowledge systems that are often invisible or inaccessible, shaped by his experience of not having access to these narratives growing up (Strachan, n.d.).

In relation to my own project, his work resonates in its focus on uncovering hidden structures and overlooked histories. Both practices aim to make the invisible visible, whether through historical absence, encoded systems, or the material processes behind technologies we often take for granted.

His practice focuses on worldbuilding through material and medium, constructing ways of experiencing knowledge more deeply—an approach that has informed my own large-scale tactile work (Strachan, 2025).

Projected Contribution

This project contributes to graphic communication design by challenging the assumption that the field is primarily digital. When I tell people what I study, they often imagine screen-based design, yet graphic communication extends far beyond digital interfaces. This project demonstrates how communication can also exist through physical, tactile forms, using textiles as a medium for storytelling and conveying an enquiry. By framing communication as something slow and tangible, it expands how graphic communication design can be understood and engaged with.

The project also contributes to wider discussions around technology and material culture by highlighting the parallels between textile and computer logic. It reclaims knitting not simply as a hobby or craft practice, but as a sophisticated system of communication and technical intelligence. Physicalising digital data through knitting reveals how information can carry cultural and historical meaning when translated into material form, making visible the connections between contemporary computational systems and their craft-based origins.

Beyond the course, this project will shape my practice by continuing to explore the relationship between analogue and digital processes and mediums. I am interested in creating work that encourages people to slow down and reflect on the technologies that are often taken for granted. In an environment where communication is designed to capture attention for only a moment before we scroll onto the next, I believe physical objects invite deeper engagement. The scale and tactility of my work encourages the viewer to pause and spend time to understand the work. This project reinforces my interest in using craft as a critical design tool and in creating work that honours the physical labour and craftsmanship that has shaped today's digital culture.

References

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