A typeface design by Jacob Ellis and Chio Chi Chan

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The Problem

The brief this typeface responds to is Curiocity, more specifically the robot academy featured at QUT. Upon reading the details, we learnt that the robot academy was an e-learning collaborative project which provided instructional videos into the design and science behind robotics (Robot Academy, n.d.). We thought that this was quite fitting as we too were collaborating in design, thus settled on this topic. When combining the themes of digitalisation and communication through typeface the commonality between each was programming language. Thus we posed the question, "What if Robots are more than just nuts and bolts? What if there are words and sentences stored in their disk, no human can decode, no Robot can translate or no voice can speak out?
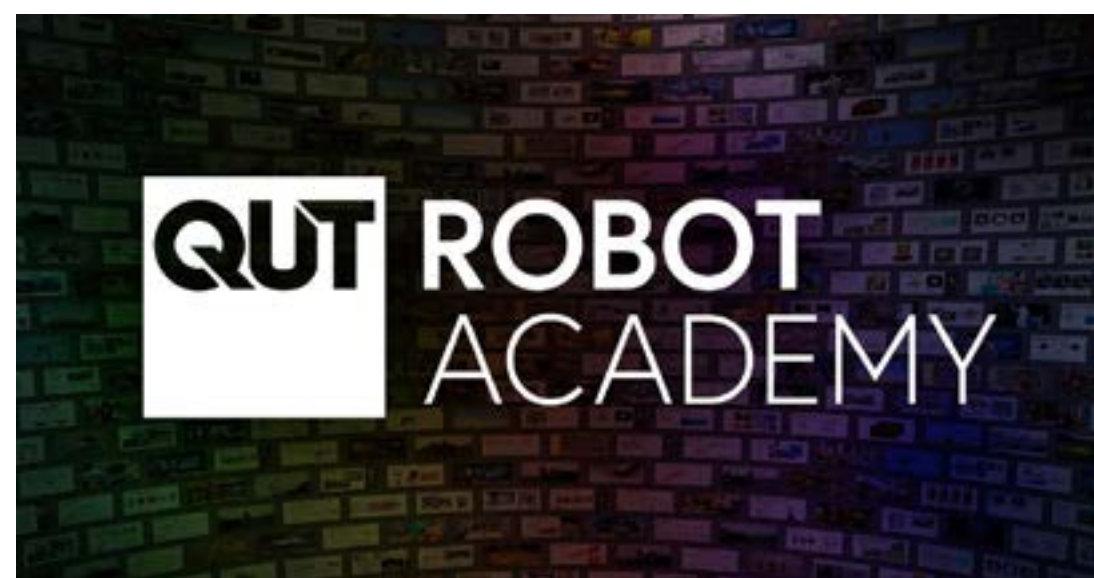
The Context

After researching various online databases and academic journals, we concluded that a post-modernism approach to our type face would result in a digitalised appearance (Willen & Strals, 2009). Designers Stephan Muller and Cornel Windlin created a digitalised font in 1994 called FF Dot Matrix (Ketchum, 2018). This example uses small circles to form each glyph and creates a polarising appeal, similar to that of traffic billboards and scoreboards. This typeface was successful in portraying a digital appeal and the principles of using simple shape and form will be helpful in creating our typeface. Upon reading into more traditional typefaces we found that the principles of sans-serif in using limited strokes created a modern bold appeal that reads quite digital. Recent history into sans-serif shows that many designers created appealing typefaces on the basis of these principles and would experiment with the sleekness that sans-serif's provides. The challenge we face is creating a font that is digitally stylised but also reads robot, simultaneously. The importance of embodying this typographic message is crucial for those that read and interpret the typeface. The key to embodying an effective typographic messages is finding a balance between logic and human intuition (Carter et al., 2012). In relation to this particular brief, finding the balance between logic and human intuition corresponds with the translation between programming language and human understanding.

FF Dot Matrix

The Response

In response, our IO typeface translates the binary data of the robots mind into letters, symbols and numbers – readable to the human eye. The IO typeface is the key to unlocking the secrets of the robotic language. This concept was developed in the initial stages of our experimentation and provided guidance throughout the entire design process.

Stage 1 of the design process began by researching keywords in response to the brief. Words like "communicate" "robots" and "computers" provided search results of images with digital landscapes containing programming language and the binary system. As a result, it was decided that our typeface would feature clean straight-edged stroke and dot, with each letter consistently spaced between one another, similar to that of programming language. Having a colour contrast between the character and background also encourages further clarity. Based on this research, we decided that sans-serif was the most appropriate style of typeface to guide our design. San-serifs do not have any extra serifs or other features at the end of each stroke. Therefore, the typeface can evoke a sense of simplicity and modernity. The width of each stroke will also be fixed in one dimension to help create the feeling of orderliness and discipline. These features will assi

Initial Colour
Scheme

Keyword
Search Results

Keyword
Search Results

First Iterations

Ineligible
Glyphs

Challenging
Strokes

The Iterations

In the second stage of our design process we adapted our findings and formed numerous iterations by experimenting with shape and form. The elements from the binary system "1" and "0" were chosen and converted into the shape of "I" and "O" for the typeface design. This decision formed the basis of our design principle and guided each letter of our typeface. Our first iterations used the shapes of "I" and "O" and placed each stroke in varied arrangements to form our glyphs. However, the result did not reach the expectation. The legibility of the glyphs was unclear and would often resemble other letters or numbers. The use of "O" in the letters "B" and "D" did not align with the stroke of "I" and was ineligible. The segments of each letter would combine with one another which also led to errors in legibility. Therefore, these were the main issues to be resolved in the second iterations.

After some discussion and analysis, we decided to limit our restrictions on the creation of the typeface. We needed flexibility in our approach to achieve legibility, so we adapted our initial principle and instead cut curves from the "O" shape to form the challenging strokes. This created another element to our design which added clarity and enhanced the overall appeal. This resolved the many challenges we faced in our previous iterations, and still demonstrated our initial design concept.

The Final Copy

For the final typeface, there are only four different shapes used in the entire design. The first is a long vertical line taken directly from the binary "1". The second is a dot which shortens the "1" and forms the shape of a square. The third is a perfect circle taken from the binary "0". The final shape is a slightly smaller circle which is a quarter of the larger circle's size. Each shape helps represent different elements in a letter. The use of line forms the vertical shaping of each glyph and incorporates the dot to represent horizontal lines and joints. The two circles are cut into different radians to form the curves of the glyphs. The cap height and the high ascender are kept to the same height which maintains the unity of the glyphs. Lastly, no horizontal line is added in the typeface since this is off the theme and is replaced by a curve. After finalising in Illustrator, the glyphs were transferred onto Fontlab where they were created into a proper file format to be used for the typographic poster.
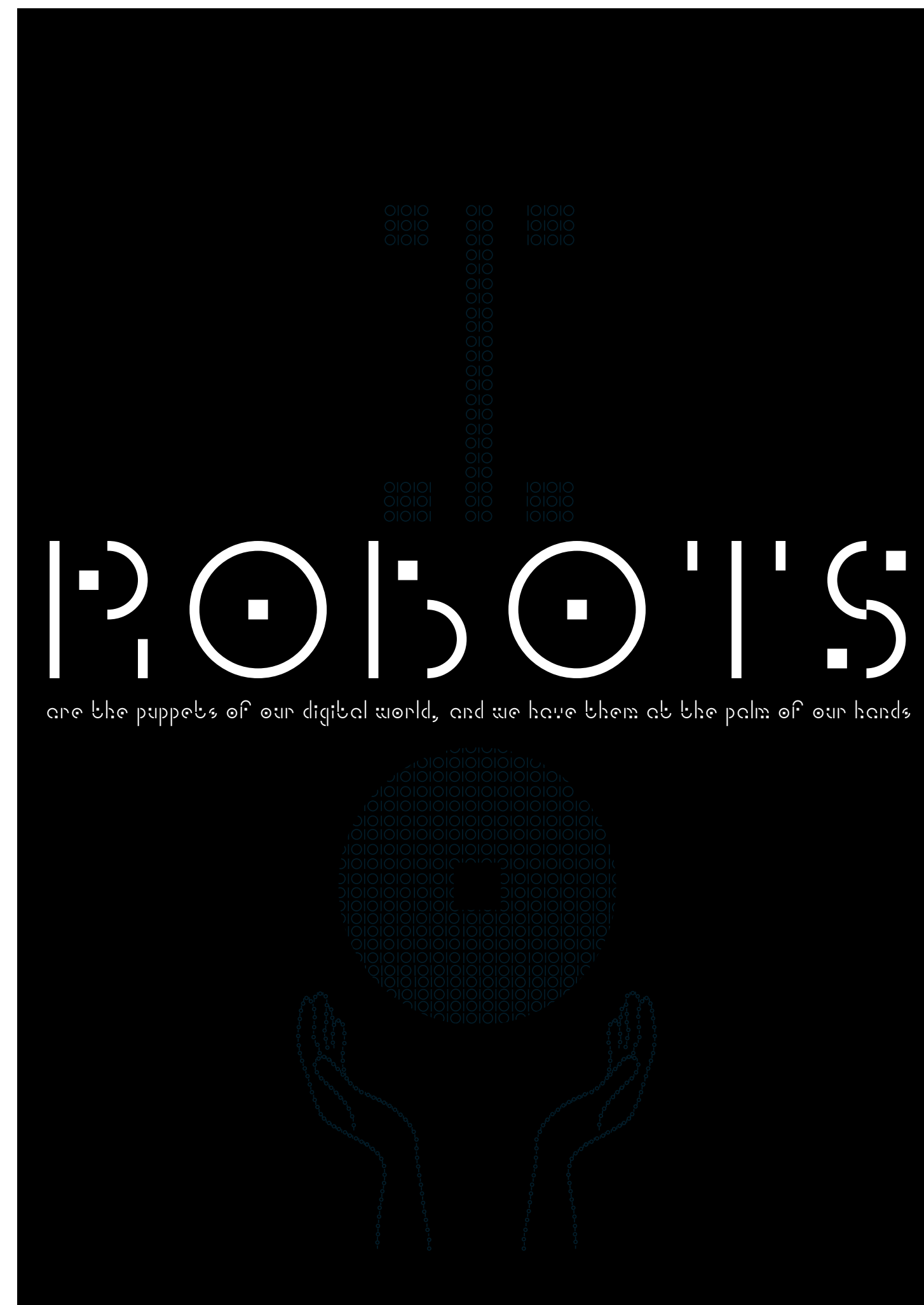

Four Shape Formations

Use of Both Circles   Use of Line and Dot

Evolution of Glyph 'a'

The Poster

In the final stage of design, we finalised the typeface then created our typography poster, to present the new design. The typeface name "IO" can be seen as the centre piece for the poster and stands for information operating. The IO is formed into the shape of a key is used to unlock the secret binary robot language. IO decodes the binary program language and converts it for human legibility. We have IO at the palm of our hands, and the message is right in front of us. The digital themes are common throughout the poster, with the "I", "O" and the hands formed by smaller "I" and "O" shapes which is also contrasted by the black and white colour scheme. The bold white lettering captures your attention and draws focus to the style of the font. These themes are consistent with the brief and add value for the typeface concept. When reflecting on the overall appearance of the typeface, the design looks robotic. The disjointed strokes and small squares form zoomed in pixels, which correlates with the digital theme. The minimalism of form and shape looks futuristic and provides clarity for legibility. The design demonstrates similarities to the binary language and evokes a sense of decoding to the reader, therefore embedding the translation theme.

Conclusion

Although there were many challenges in our design journey, the process of experimenting with the formations of letters was fun and rewarding. The biggest challenges we encountered were the restrictions we placed on ourselves in the initial iterations. Learning from that process has provided insight we can take into our future typeface design scenarios. "Robots are the puppets of the digital world, and we have them at the palm of our hands". After conceptualising our final iterations and promotional design we are happy to say that, "typography is the key to presenting communication, and it all starts at the top our fingertips".

References

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