

CREATIVE ENGINEERING

Nassi Mandalas

2026



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/AIM93

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/KROSSA

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/DFM

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/KINESIS

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/ME

A creative engineer with practical experience in mechanical design, prototyping, and CAD software. I have developed strong skills in within teams, managing design projects, and ensuring quality.

My hands-on experience in product design and ability to work independently makes me a great fit for diverse engineering projects. Looking to contribute my skills and **make a positive impact on society.**

/EDUCATION

BSC ENGINEERING PRODUCT DESIGN
London South Bank
2021 - 2024

BENG ENGINEERING
Open University
2020 - 2021

/CREATIVE STACK



/CAD STACK



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AIM99



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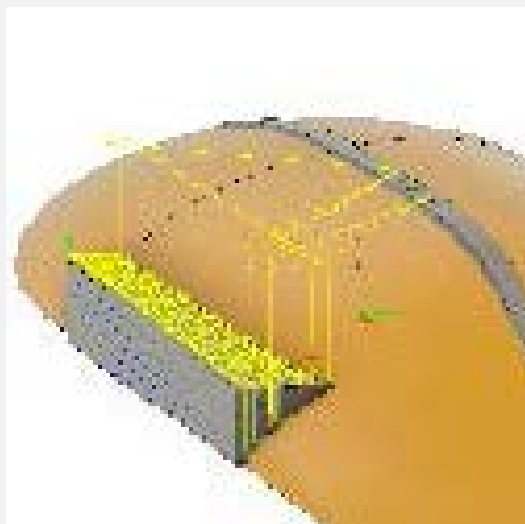
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PROCESS



CAD PLANNING

Divided the full-scale fairing geometry into machinable sections and prepared the CNC toolpaths.



FOAM PREPARATION

Prepared and aligned foam blanks so the large body surface could be machined accurately in sections.



CNC MACHINING

Milled each section to produce accurate full-scale tooling for the composite shell.



COMPOSITE LAY-UP

Laminated carbon fibre over the prepared surface to create a lightweight aerodynamic fairing.

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BATTLE MOUNTAIN. NV



/KROSSA

the brief

Design a household product using one sheet of plywood and supplied Eco Leather offcuts, while remaining recognisably IKEA in form, function and material use.

Concept

Pushing the paired handles folds the upper panels inward to compress the contents; lifting them resets the form. The waste leather works as a flexible joint rather than decorative trim.

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research and direction

Store visits and competitor research highlighted compact living, flat-pack construction, accessible materials and multifunctional products. These observations established an IKEA-aligned direction based on simple geometry, easy handling and playful detail.

sketching and pop models

Rapid sketches explored handles, folding seams and compression methods. Cardboard models tested how the upper panels collapsed and reset, leading to the paired-handle mechanism and flexible leather joint.

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Smarter Recycling

IKEA's sustainable solution to over-flowing recycling

KRÖSSA

Design and Quality
IRCA of Sweden

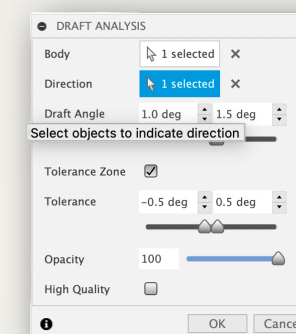
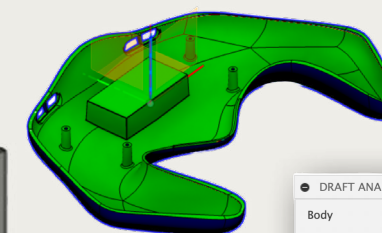
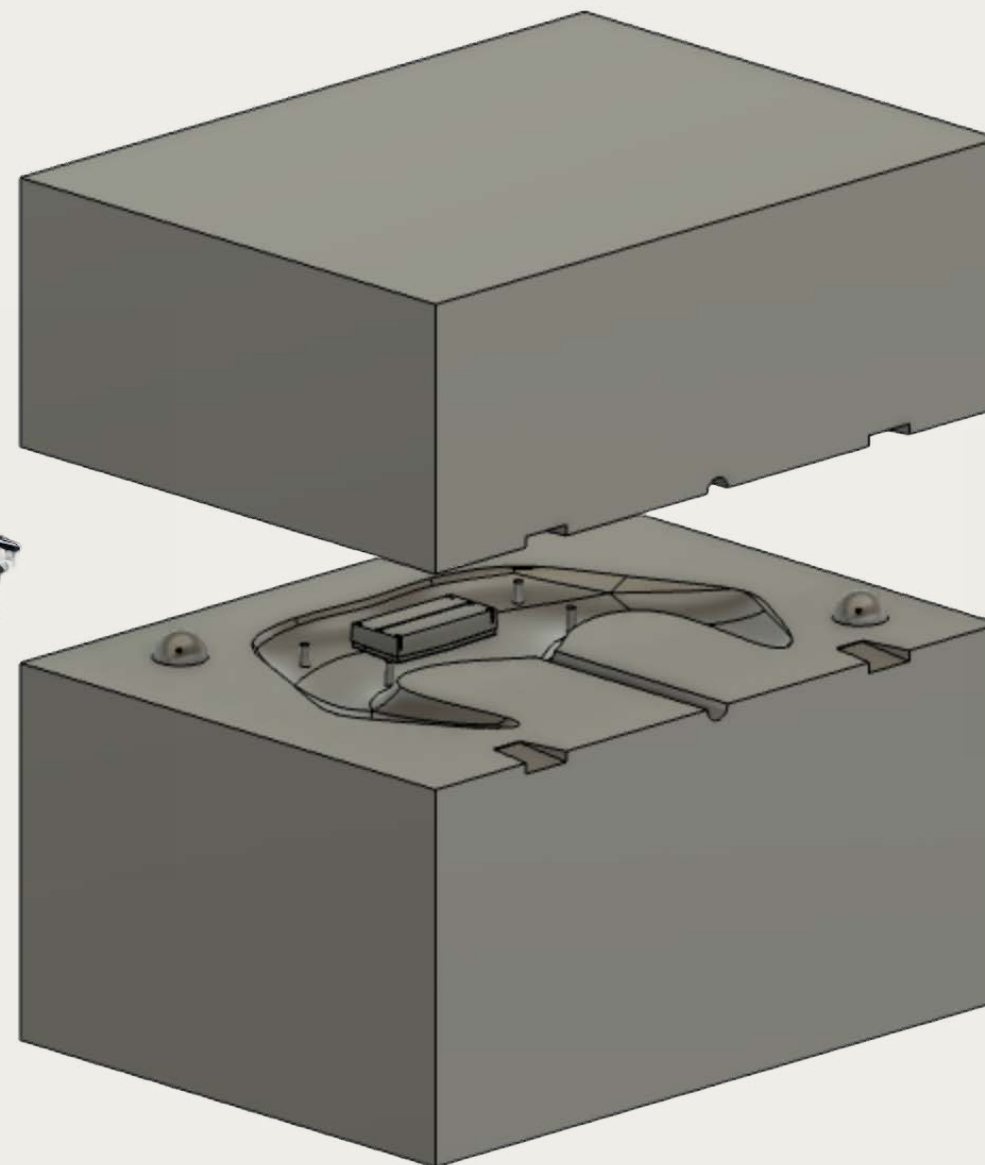
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/PROMO-DRONES

DFM



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IDEATION

Design cues from the Honda CBR design language. Layered fairings, red bodywork and black technical inserts—were translated into a handheld controller. Form studies refined the grip, control placement and enclosure

TOOL DESIGN

The enclosure was divided into manufacturable shells with draft angles, fastening points and internal clearance. A mould-tool and CAM study tested how the final form could progress towards injection-moulded production.

PROCESS

/KINESIS

FINAL YEAR PROJECT.

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/IDEATION & PROTOTYPING

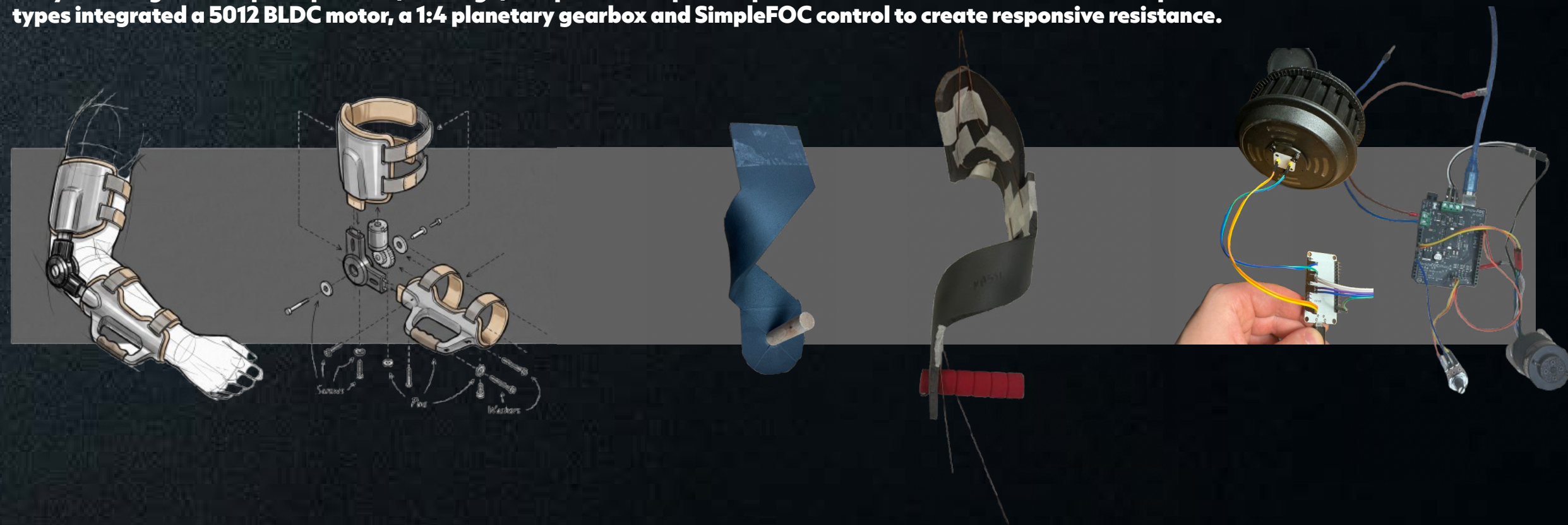


CONCEPT SELECTION

Three directions explored torque-driven resistance, real-time feedback and personalised joint support. I selected the torque-driven route because it connected body movement directly to adjustable load through a compact mechanism.

PROTOTYPE DEVELOPMENT

Body-scale rigs tested pivot position, leverage, straps and component placement before detailed CAD. Later prototypes integrated a 5012 BLDC motor, a 1:4 planetary gearbox and SimpleFOC control to create responsive resistance.



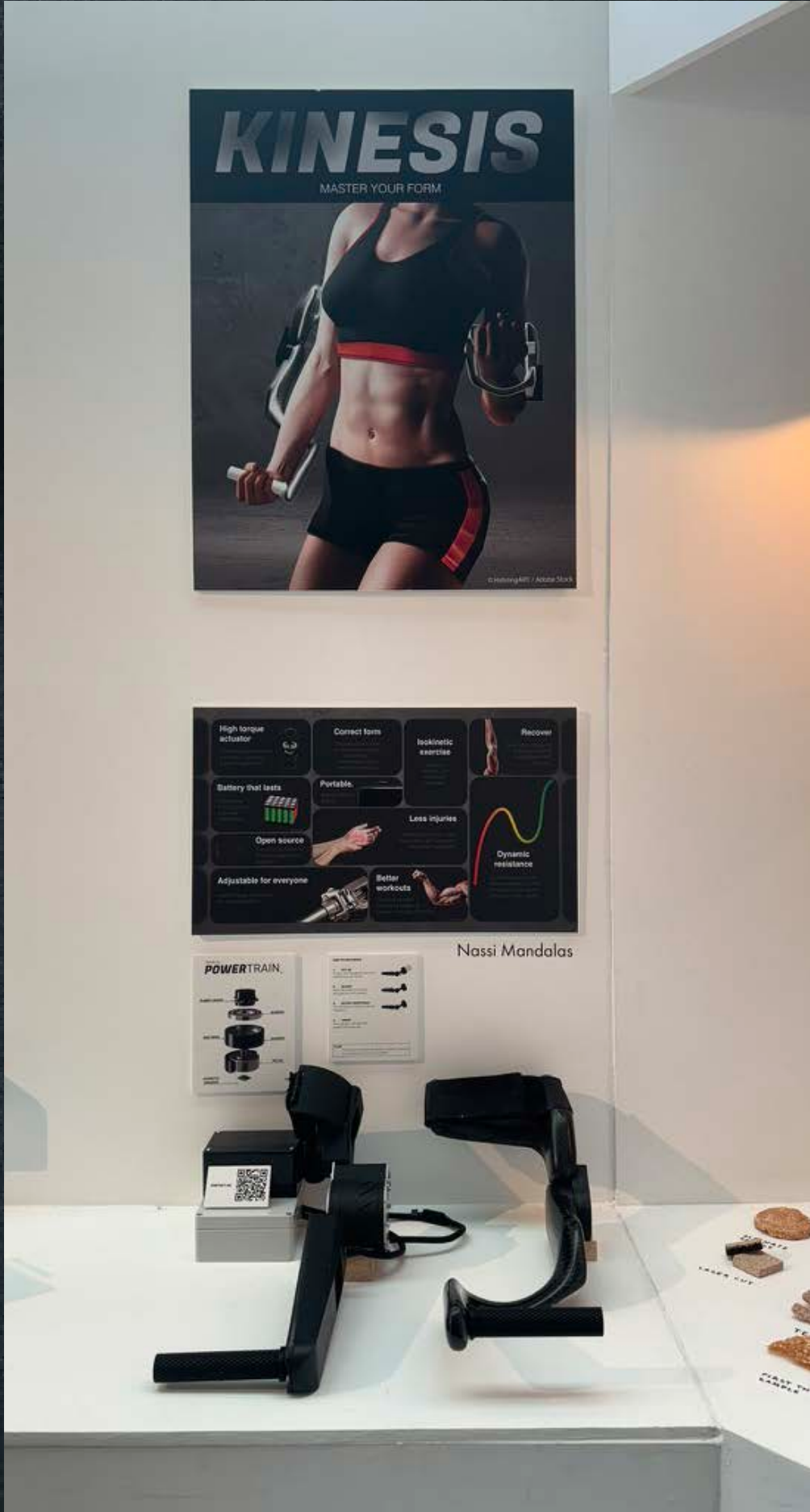
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/FINAL PRODUCT

New Designers 2024 - London

Kinesis was presented as a working wearable resistance system. The display connected the final prototype with its mechanism, research and testing, making both the product experience and the engineering behind it easy to understand.



Product of Southbank 2024 - London

The integrated prototype demonstrated the core system and its documented 4 kg resistance target. Testing also established the next priorities: improved balance, stronger strap security, additional padding and clearer setup instructions.

**L E T ' S
M A K E
THE NEXT
PHYSICAL
THING.**

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Creative Engineer**

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