

Hello!

I'm **Matias**

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Profile

Industrial Design

I create product concepts from the initial stage of an idea and bring them to life using iterative design process. I have worked in different kind of projects through design thinking, conceptualization and final solution.

Medical Devices

I like the way I can help improve life quality of people, applying ergonomic studies, engineering and developing functional medical devices that supports patients health and medical professionals to achieve better results with accuracy.

Visuals

As a designer, I understand the importance and impact of visuals, so I work helping brands and companies show their work and products in a visual appealing way. Working in projects from branding, packaging and 3D modelling for image renderings and animations.

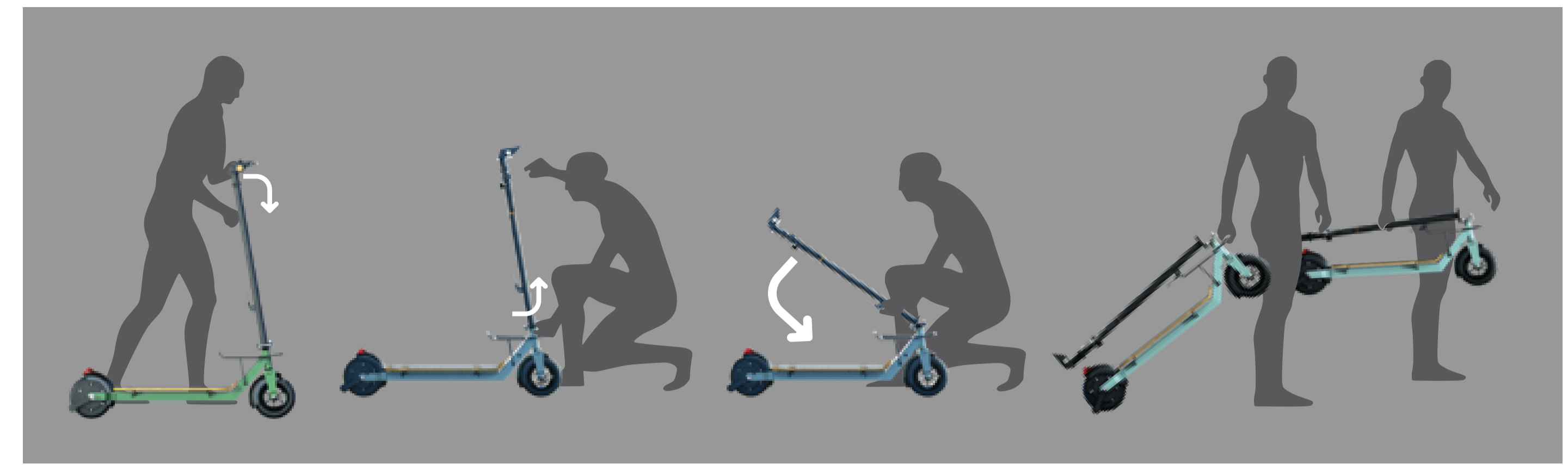
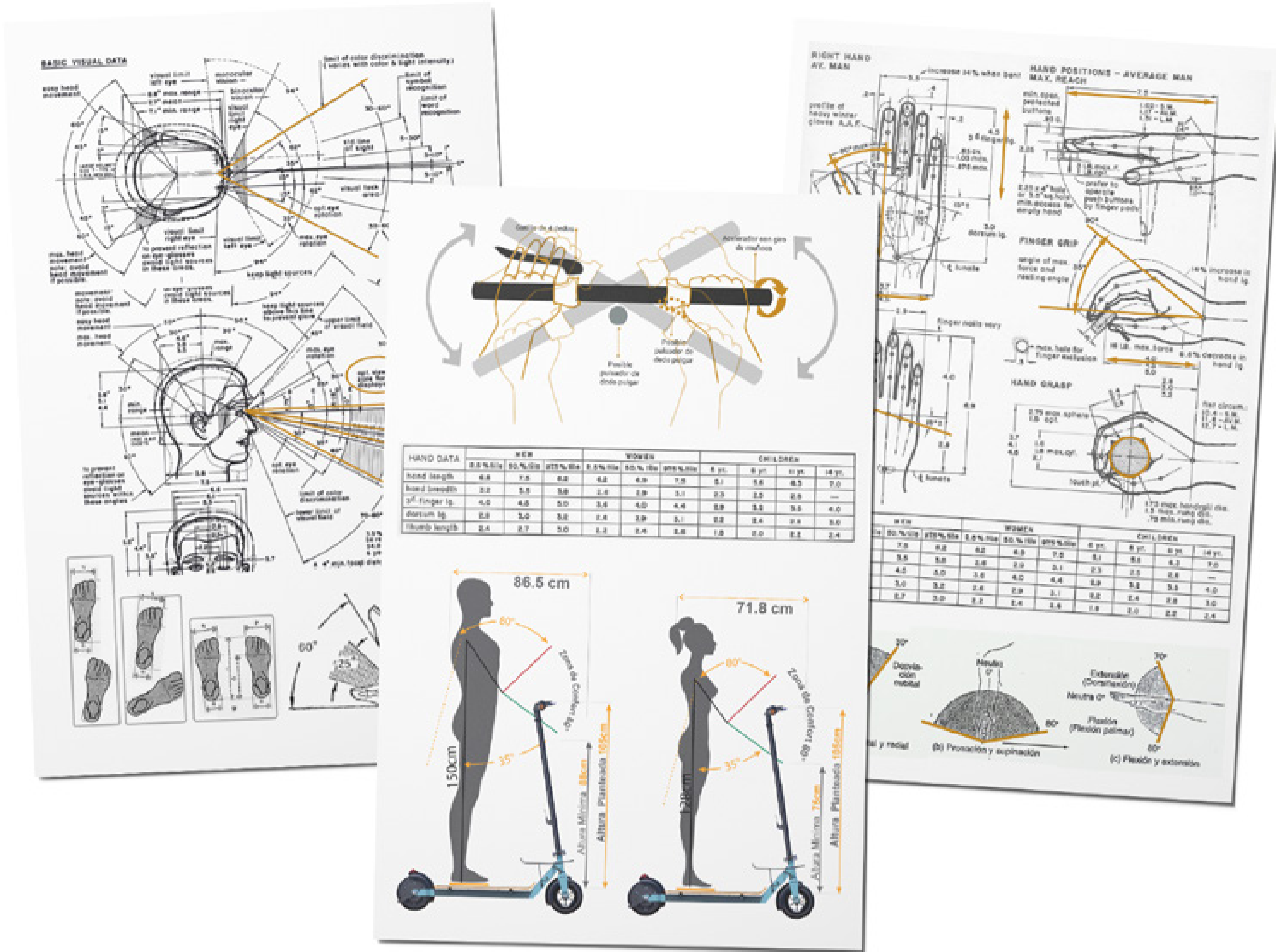
Fluie

Electric Scotter

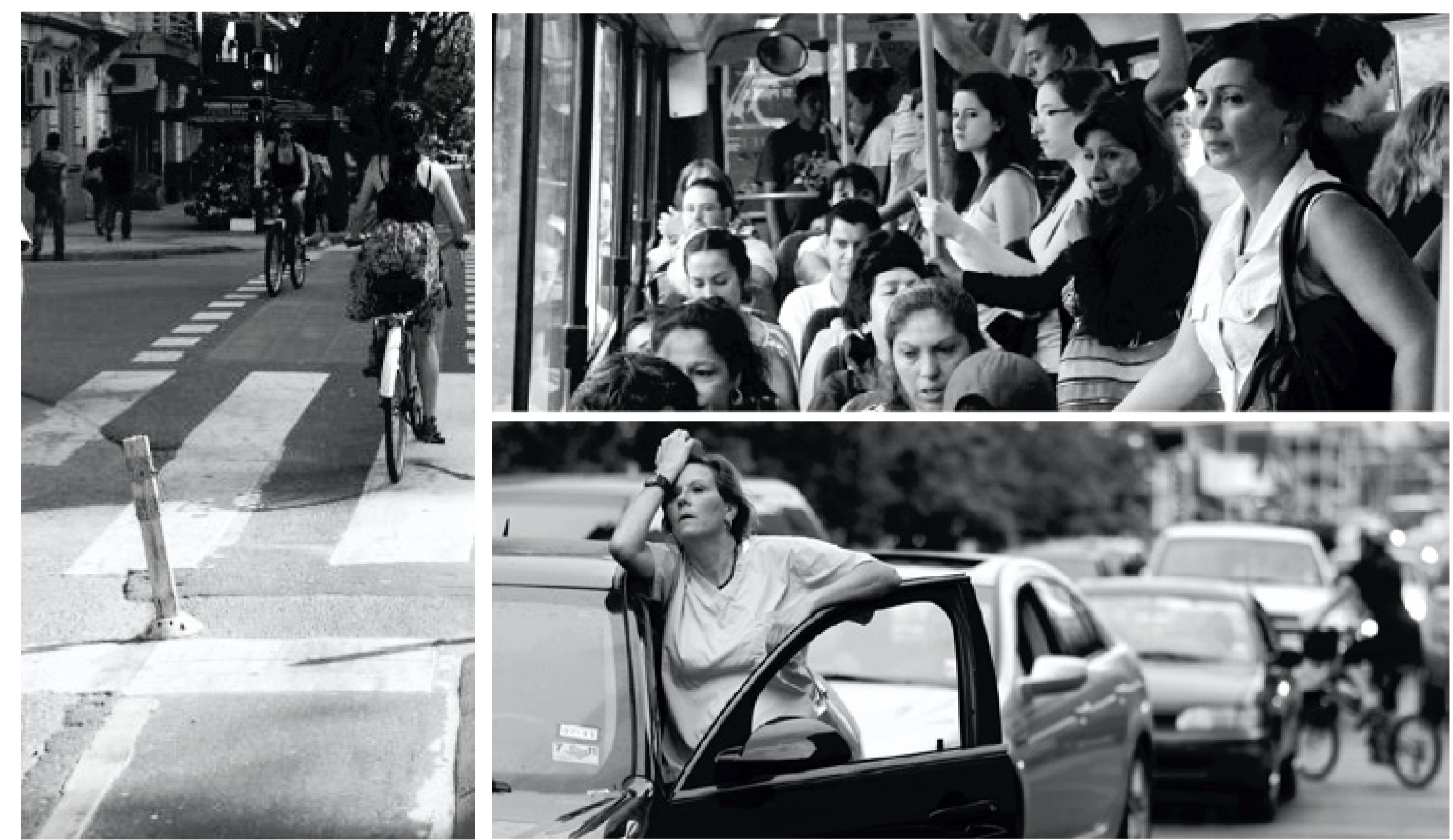
As my final degree thesis in design school, I took on the challenge of designing an electric scooter tailored to urban mobility needs.

This project involved a comprehensive approach, from context and user behavior analysis, to creating a fully functional prototype. Improving personal transportation in cities, integrating aesthetics, ergonomics, and functionality.

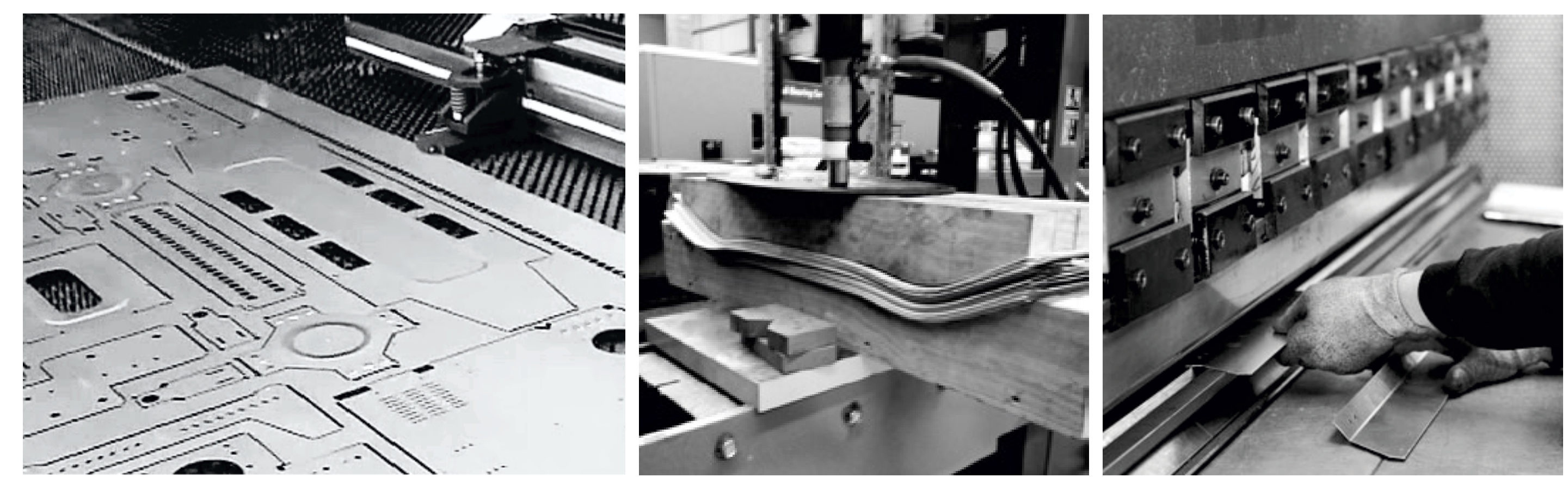




USER-CONTEXT

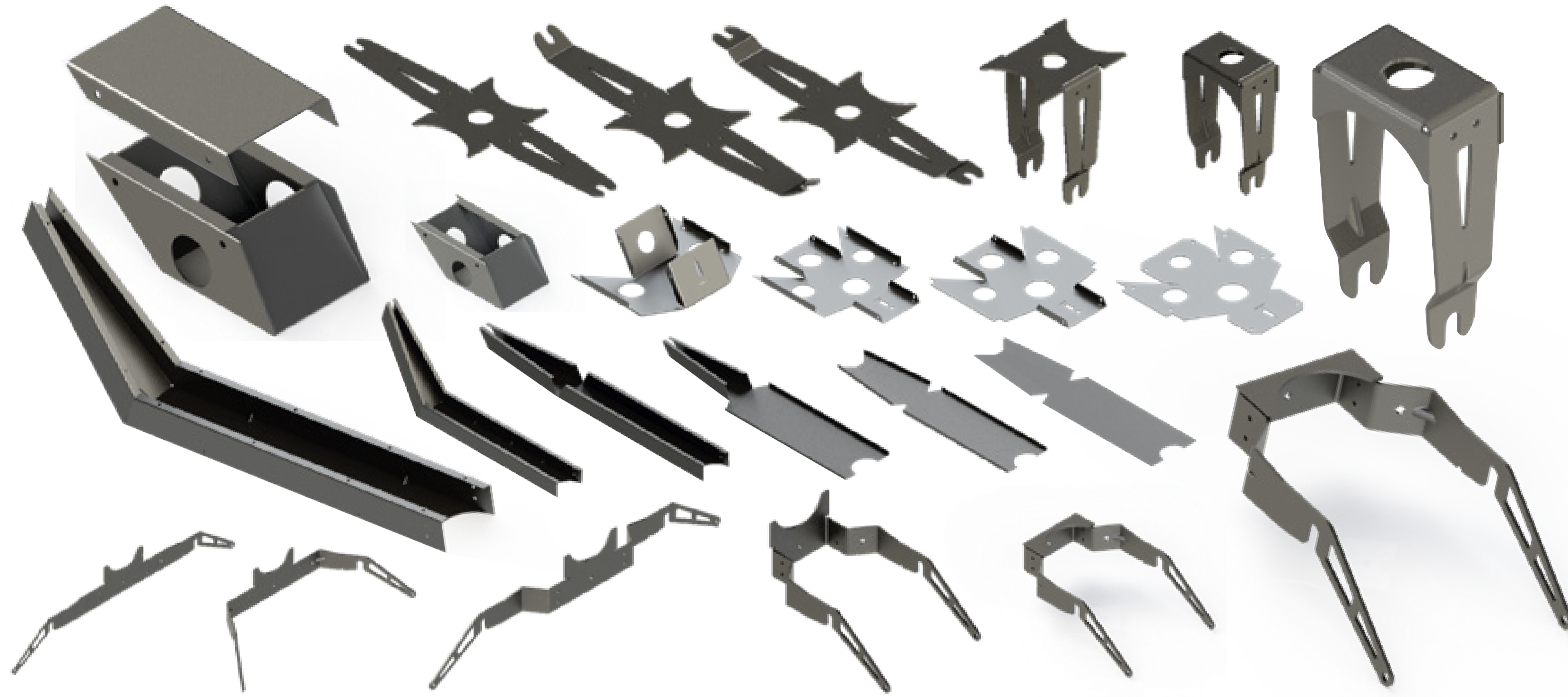


PRODUCTION PROCESS



Design Program Ergonomic Study

To ensure the product was truly user-focused, I began by conducting a detailed analysis of urban infrastructure and the behaviors of city dwellers when it comes to personal transportation. Through different surveys, observational studies, and data analysis, I gained insights into user needs, preferences, and pain points. The ergonomic study was crucial in defining the scooter's dimensions and functionality.



Prototype & Manufacture

Moving into the prototyping phase, I worked with metal sheets and employing various metallurgic techniques to bring the scooter to life. This hands-on process allowed me to test the structural integrity and functionality of the design, making necessary adjustments to the frame, weight distribution, and materials.





Vardoger

Crafted WoodCaps

I founded my personal company with a passion for combining craftsmanship and innovation, focusing on creating a unique brand of handmade wooden caps.

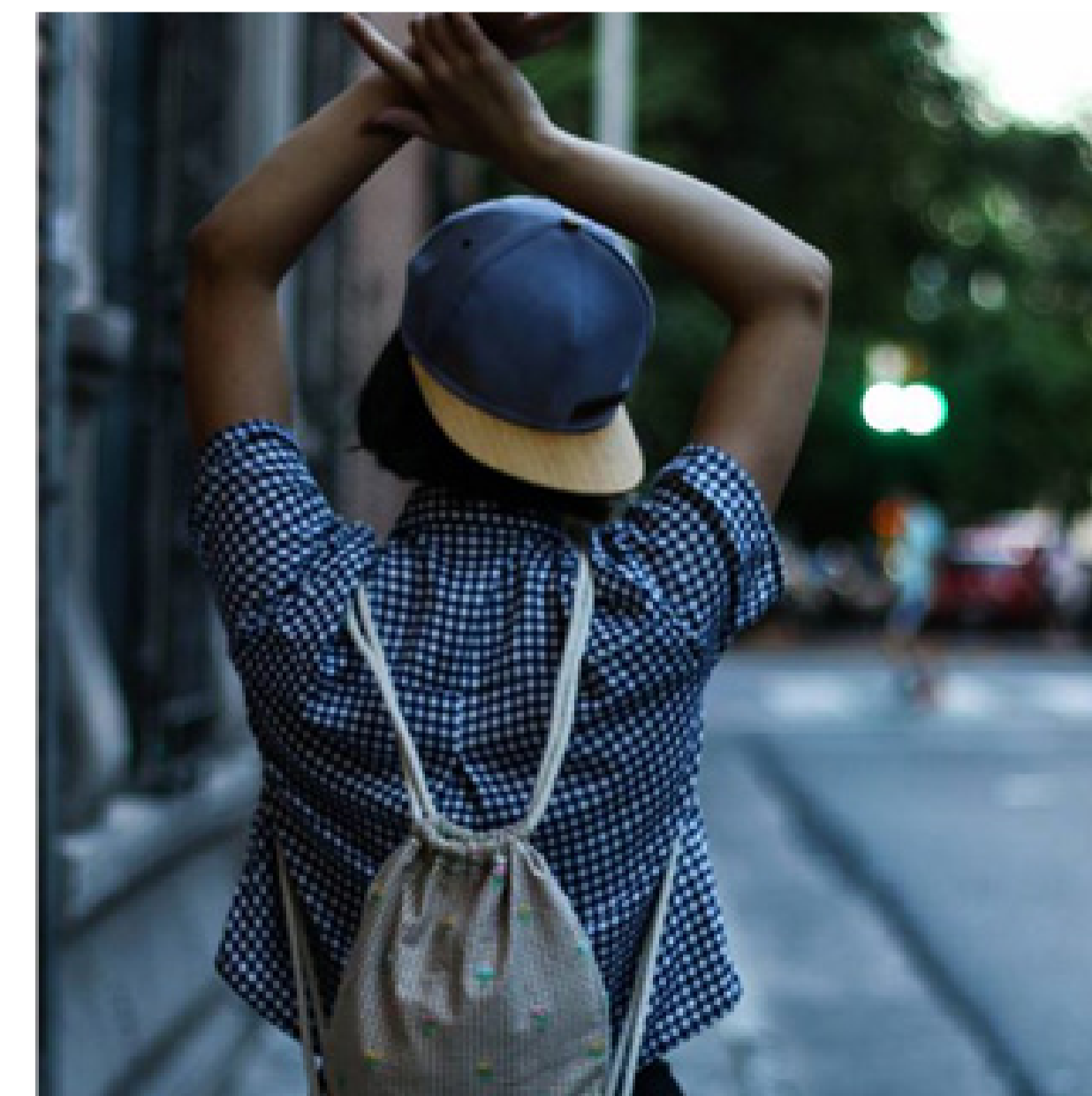
This project merges traditional techniques with modern technology to bring elegant, functional, and sustainable fashion products to market.





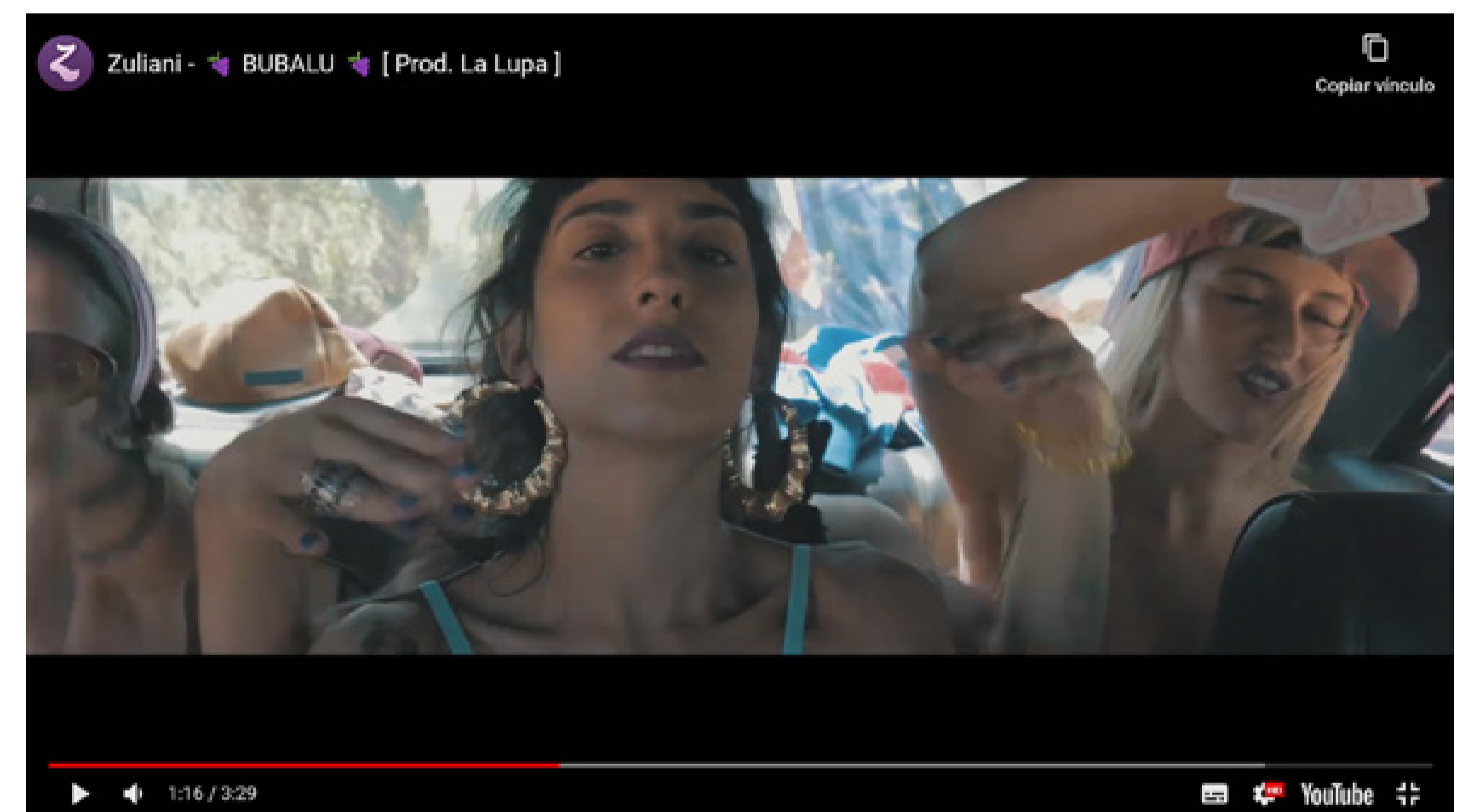
Produpction & Process

Vardoger starts as a sustentainibilty brand, working in a low volume production process as statement and empyoing reco-vered materials as old clothes, leather bags and other recycled industrial wastes. Integrating them with a wood brim as principal diferential and developing a deep understanding of material handling, and production workflows.



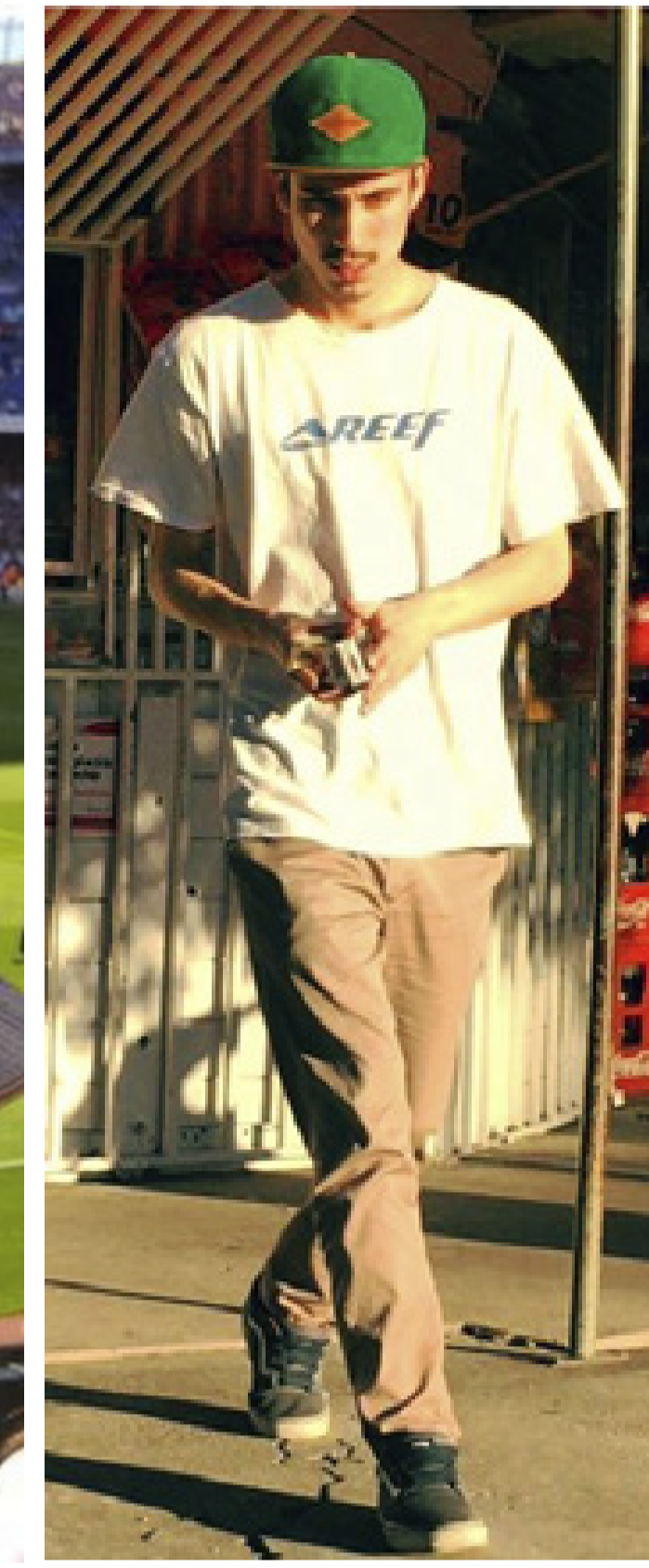
Branding Strategy

The creation of the brand has been a key part of this project's success, developing a cohesive concept and brand identity that reflects the uniqueness and craftsmanship of each product. From logo and identity design, to packaging and marketing content, every aspect of the brand communicating quality, authenticity, and a commitment to sustainable production, creating a strong connection with our customers.



Collabs & Network

The brand collaborated with different artists, brands and design festivals, blending their creativity with a vision to produce limited edition collections. Committed to promoting local entrepreneurship, I was part of the organization and management of regional events and fairs for the promotion of local emerging design.



Business Management

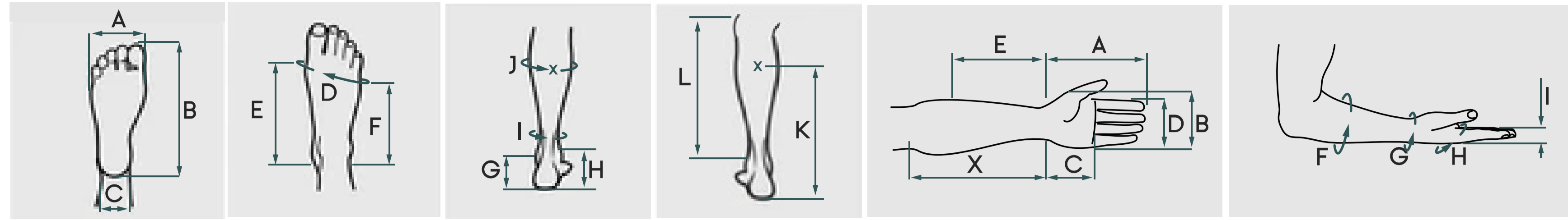
Managing the sales and distribution of my products has given me firsthand experience in running a microenterprise, balancing production with demand, customer service, and inventory control. This project also allowed me to improve skills in problem-solving tasks, adaptability and business operations.

SOMA+ Medical Device

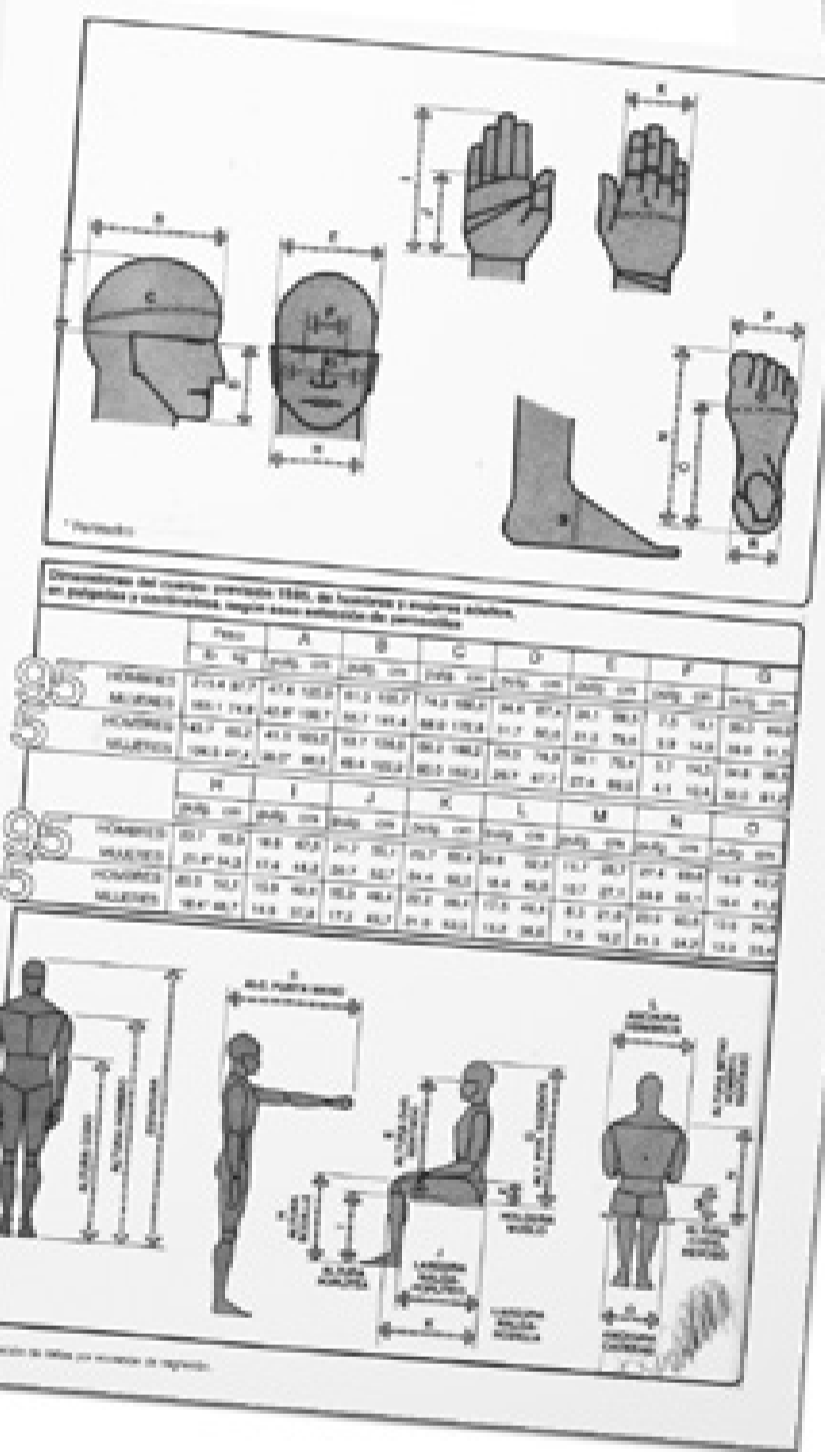
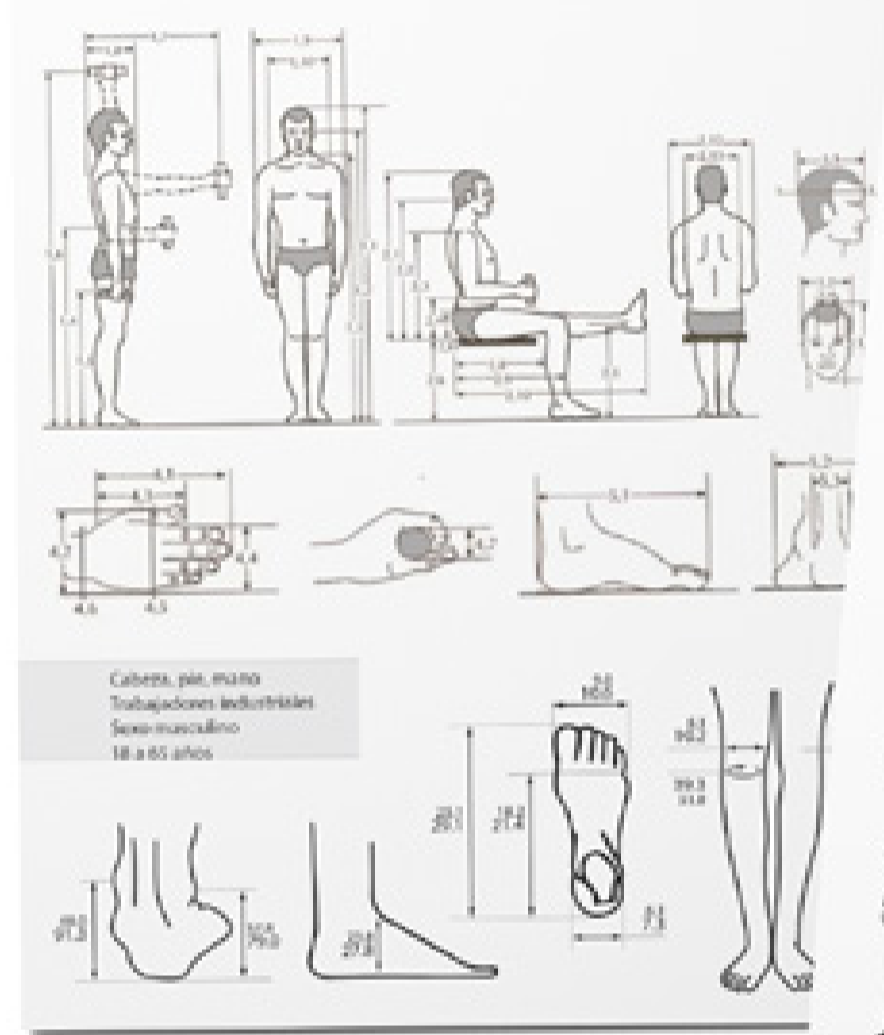
Project development of a highly adaptable orthosis size system for arms and legs.

Utilizing 3D printing technology, the orthosis starts as a flat structure and is later shaped to any patient's morphology using heat, ensuring comfort, functionality, and customization, while adhering to strict ergonomic and anthropometric standards.





Medidas antropométricas estándar (cm)	5%	50%	95%	Media	D.P.	5%	50%	95%	Media	D.P.
1.1 Estatura	149	158	169	158,8	6,13	162	171,1	182,5	171,5	6,79
1.2 Altura del codo	128,9	141,9	152,5	142,4	5,36	149	159,5	172	149	6,67
1.3 Altura del hombro	122	131	139,5	131	5,45	133	143	154,5	143,2	6,46
1.4 Altura del codo	82,5	89,5	97	89,5	4,29	90,5	100	110	90,1	5,31
1.5 Altura del brazo	56,5	61,5	67	61,5	3,31	66	73	80,5	66,4	4,31
1.6 Longitud del brazo	38	38	44	38,9	3,27	38	43	48	40,8	4,79
1.7 Longitud del antebrazo	33	33	45	38,1	4,03	38	42	53,5	39,3	5,63
2.6 Altura palmar	36,5	40,5	45,5	40,5	2,56	44	48,5	53	45,8	2,29
2.9 Circunferencia del tobillo	41,4	43,5	49	45,3	2,62	45,5	47	51	46,9	2,67
4.1 Tamaño del pie	19	18,5	17,5	18,6	1,08	18	18	20	18,2	1,17



Dimensiones	5%	50%	95%	Media	D.P.
21 Ancho cabeza	128	134	144	134	10
22 Ancho oído	118	124	134	124	10
23 Ancho cara	124	130	140	130	10
24 Ancho cara	124	130	140	130	10
25 Ancho cara	124	130	140	130	10
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27 Ancho cara	124	130	140	130	10
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100 Ancho cara	124	130	140	130	10

106 Biomechanical engineering of textiles and clothing

6.5 Anthropometric measures.

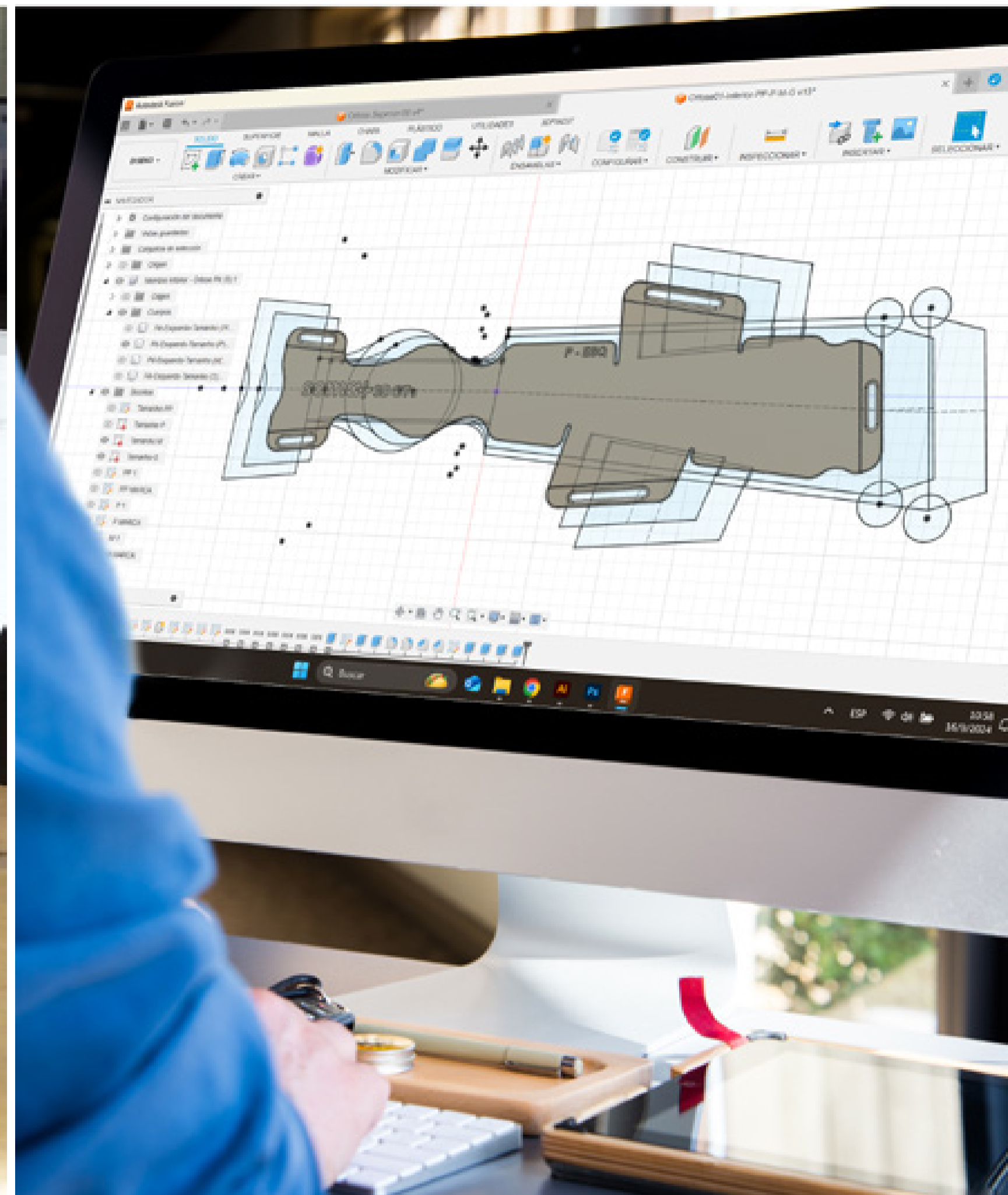
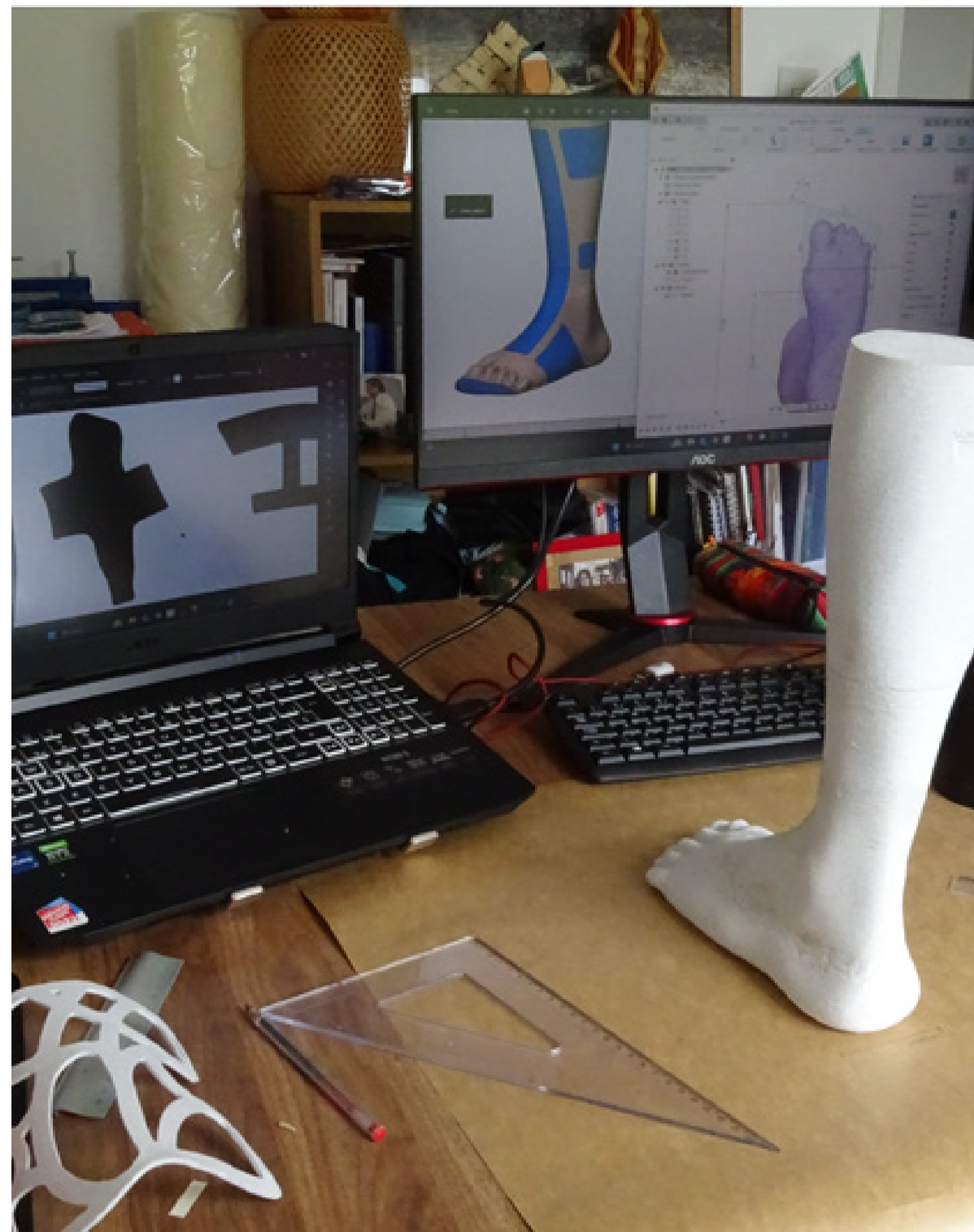
Segment	5th percentile	50th percentile	95th percentile	5th percentile	50th percentile	95th percentile
1 Head	4200	4560	4900	4200	4440	4550
2 Neck	850	1140	1140	930	1190	1270
3 Thorax	20520	26220	31720	20420	26110	31700
4 Abdomen	2000	2570	2850	2030	2500	2960
5 Pelvis	9410	12080	15110	9400	12000	15100
6 Upper arm	1710	2000	2870	1600	2500	2500
7 Forearm	1140	1430	1710	1180	1480	1720
8 Hand	570	570	570	460	530	610
9 Ho flap	2950	3710	4280	2890	3640	4380
10 Thigh	5420	6840	7980	5480	6700	7800
11 Calf	3420	3990	4890	3320	4040	4780
12 Foot	960	1140	1140	840	1010	1180

6.6 Mass and volume for different segments.



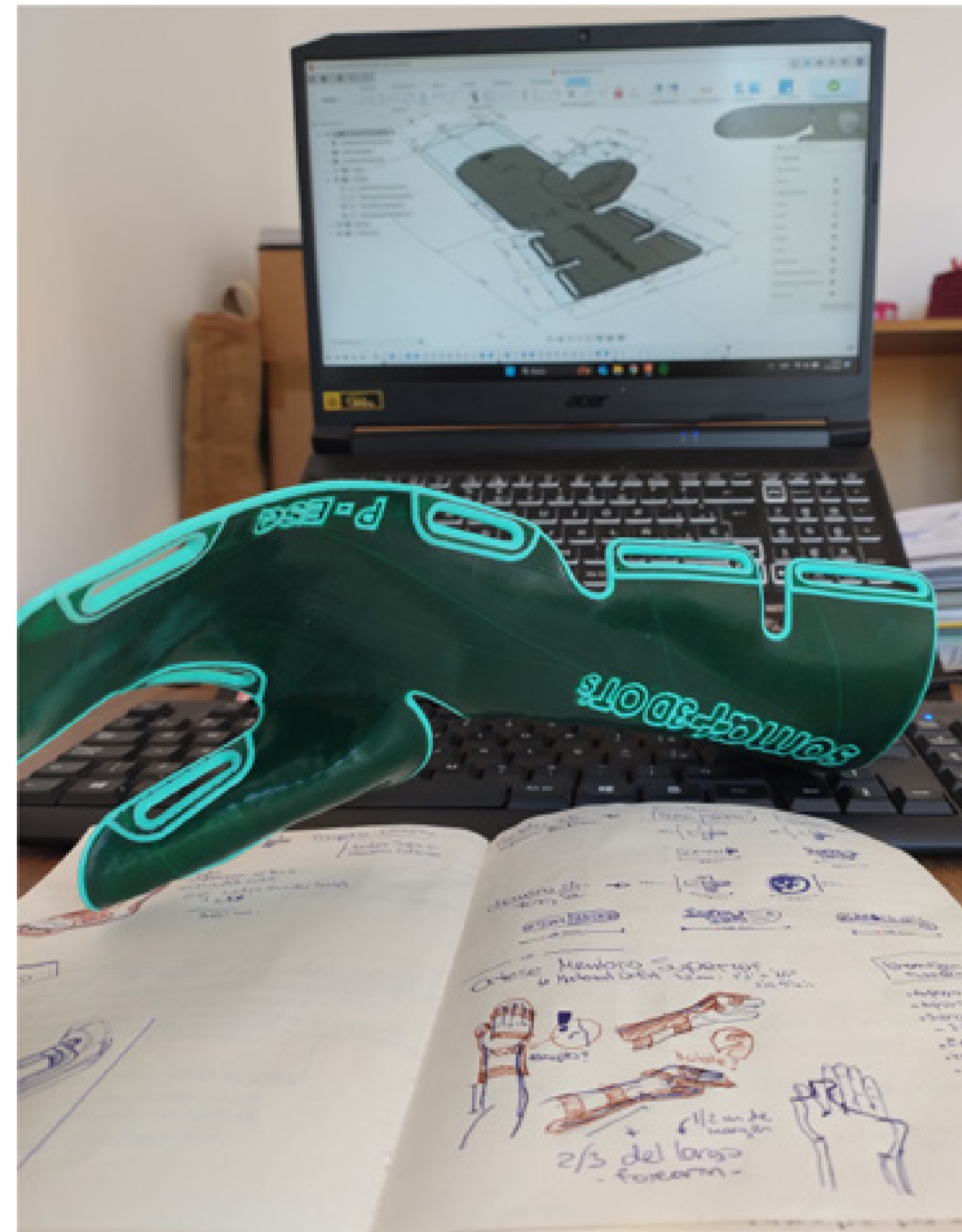
User Analysis

An in-depth ergonomic analysis was essential for the anatomical design of XS, S, M, and L dimensions. This process included detailed anthropometric measurements and biomechanical evaluations to ensure the product adapts seamlessly to various limb/arm shapes and sizes. To optimize comfort, mobility, and support, I analyzed patient movements, comfort zones, and pressure points, allowing the orthosis to provide a tailored fit across a wide range of users



Design Concept

By utilizing hand-drawn sketches, hands-on mockups, and 3D modeling, I explored user-centered designs with a strong emphasis on how the final product would conform to the human body from a flat surface. The design was iteratively refined through feedback loops, ensuring both functional and aesthetic considerations.

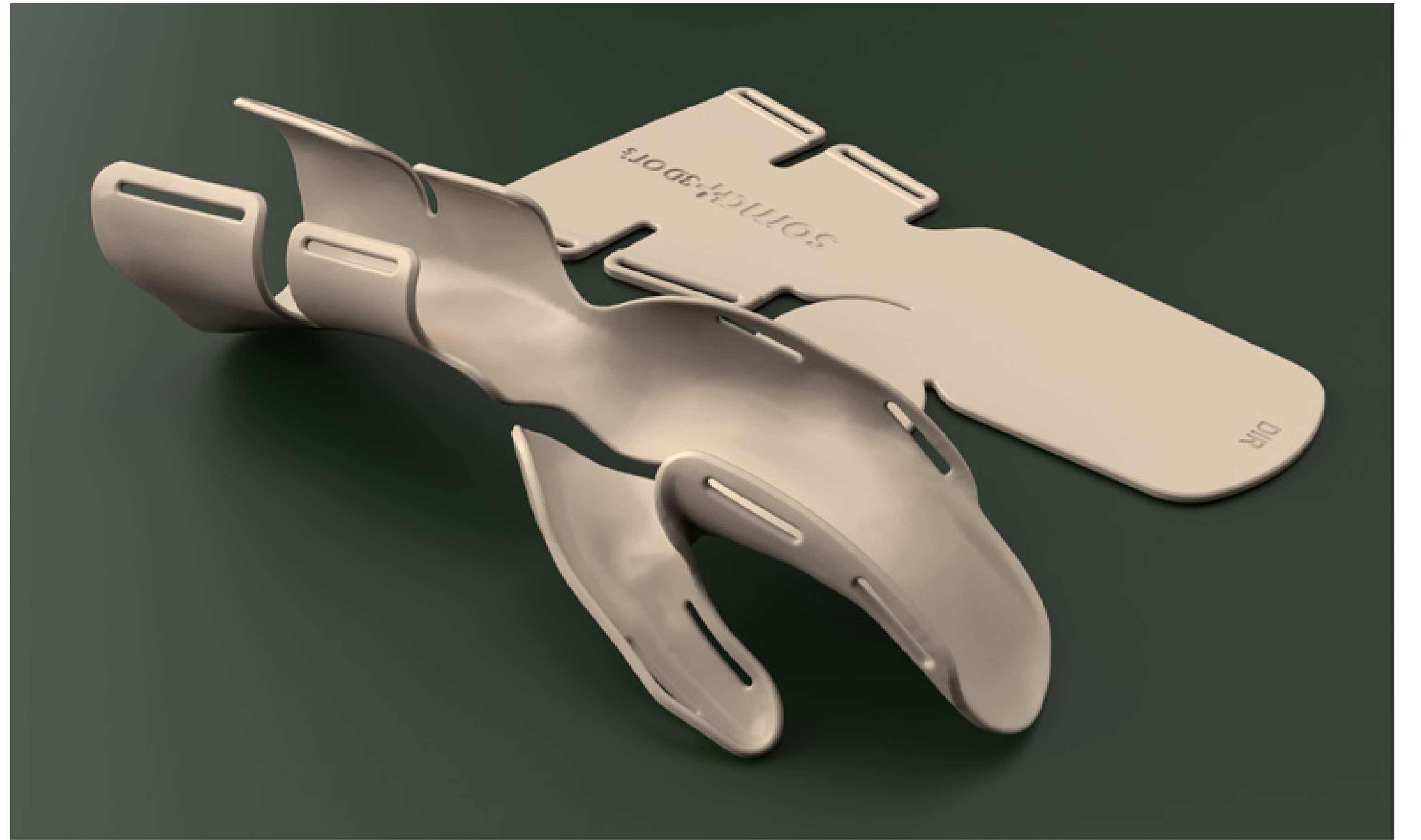


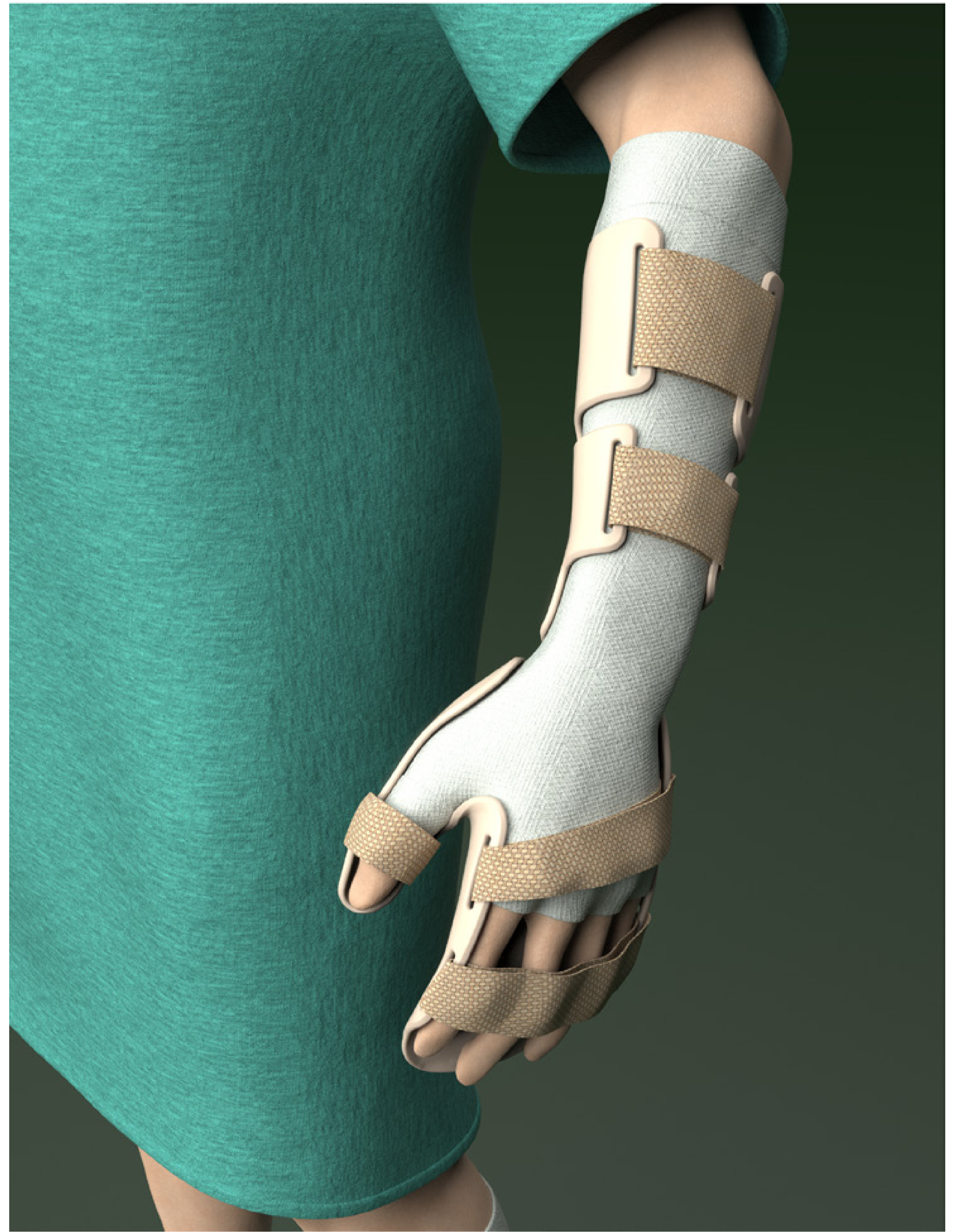
Prototyping Process

In the prototype phase, the 3D printing technologies allowed creating physical models for testing. These prototypes underwent rigorous validation, including thermal adaptation tests and mechanical properties.

The prototypes were tested for durability, flexibility, and comfort, meeting all the design requirements and providing a perfect fit for patients.







Surgical Implants

Standard/Custom Solutions

Over the course of 6 years, I worked as a design engineer, specialized in patient-specific implants and medical devices.

Collaborating closely with clinical surgeons, I was responsible for CT segmentation and CAD modeling, ensuring that every device was precisely tailored to strict anatomical needs.

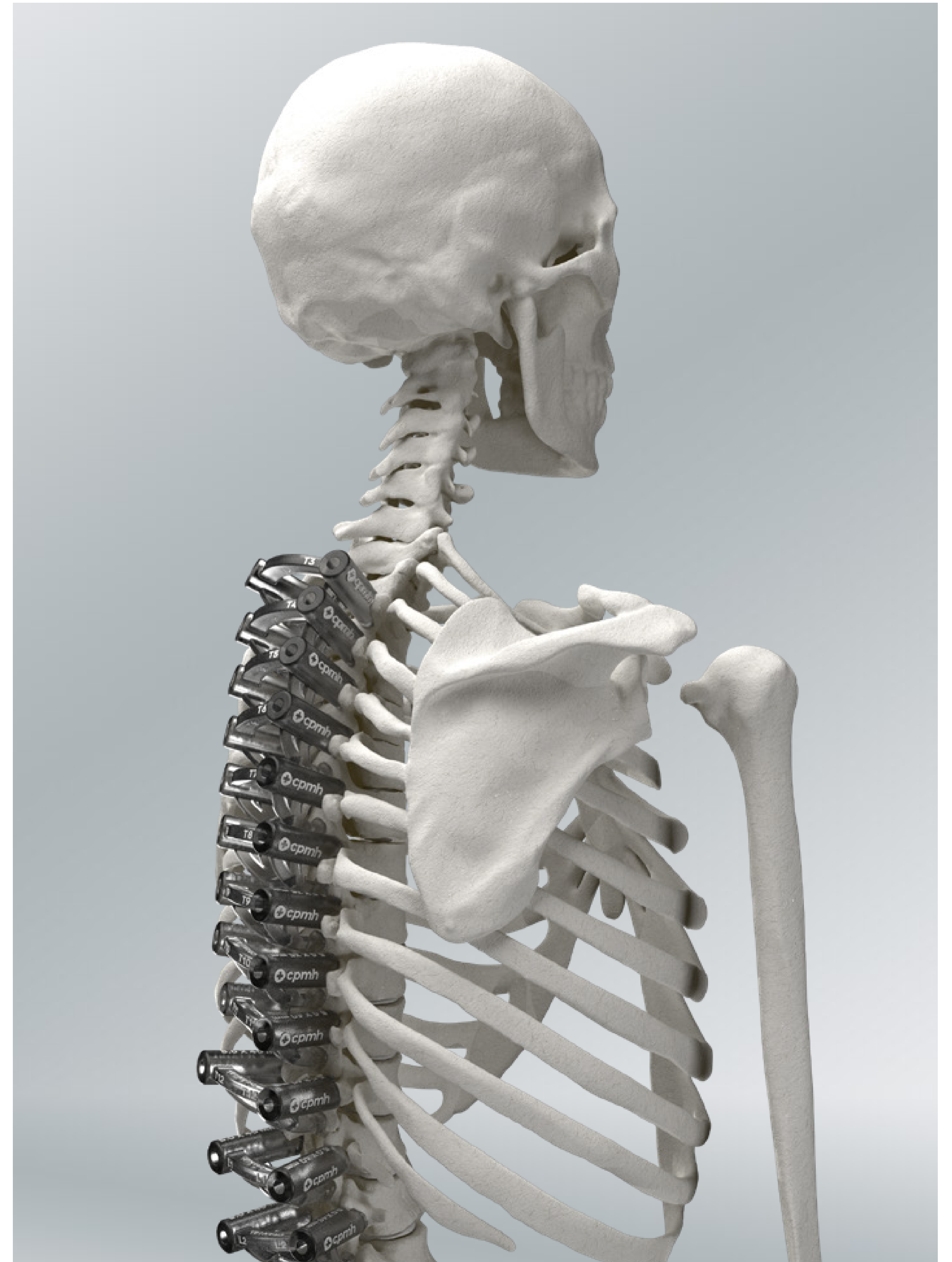


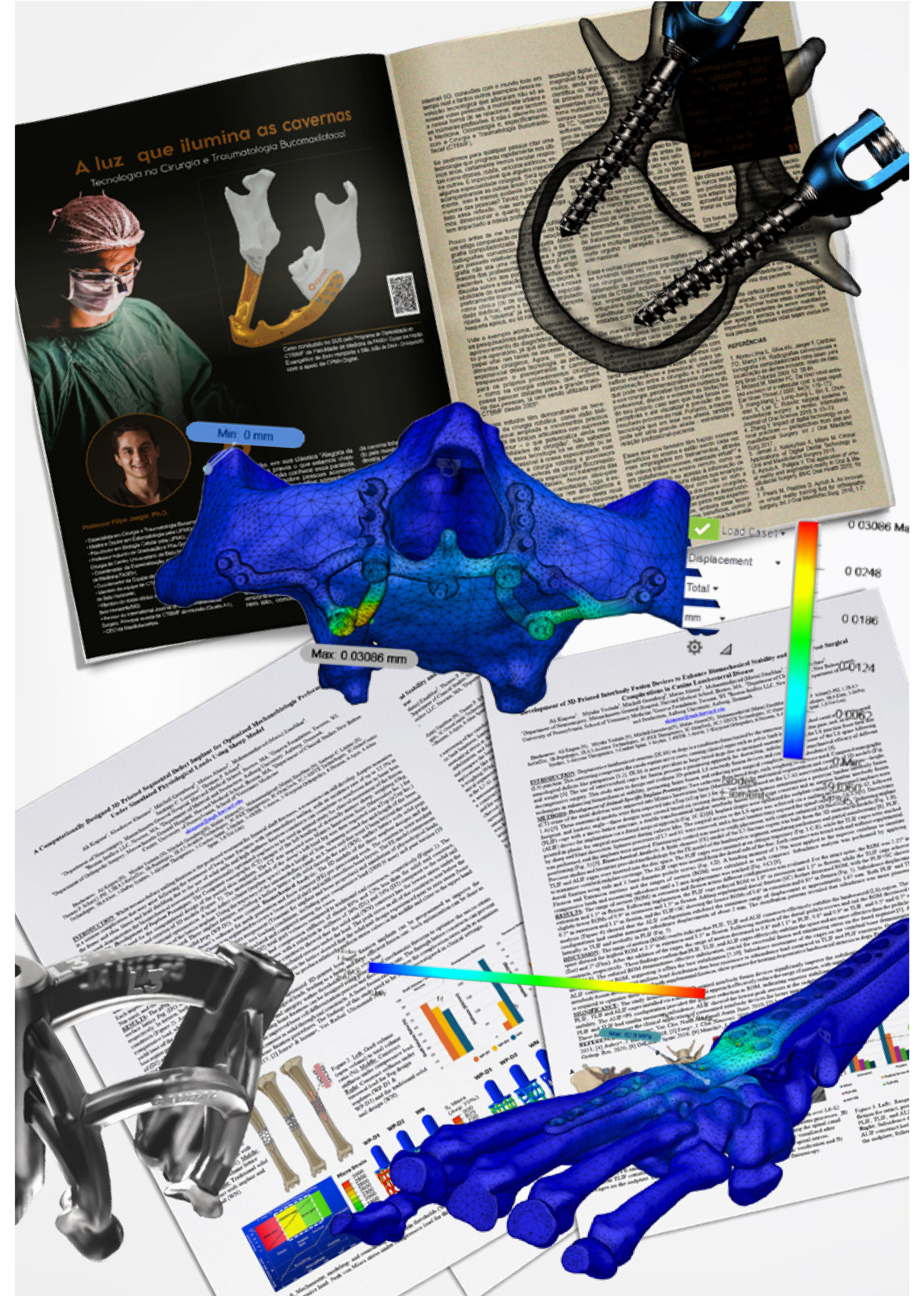


Medical Images

Data Management and Segmentation

A crucial part of the process is the CT and medical image segmentation, converting image and scanned data into 3D anatomical models. Using specialized software and creating highly accurate biomodels suited for CAD design and additive manufacture. This step ensured that the devices were perfectly aligned with the patient's anatomy, providing optimal fit and function while minimizing risks during surgery.

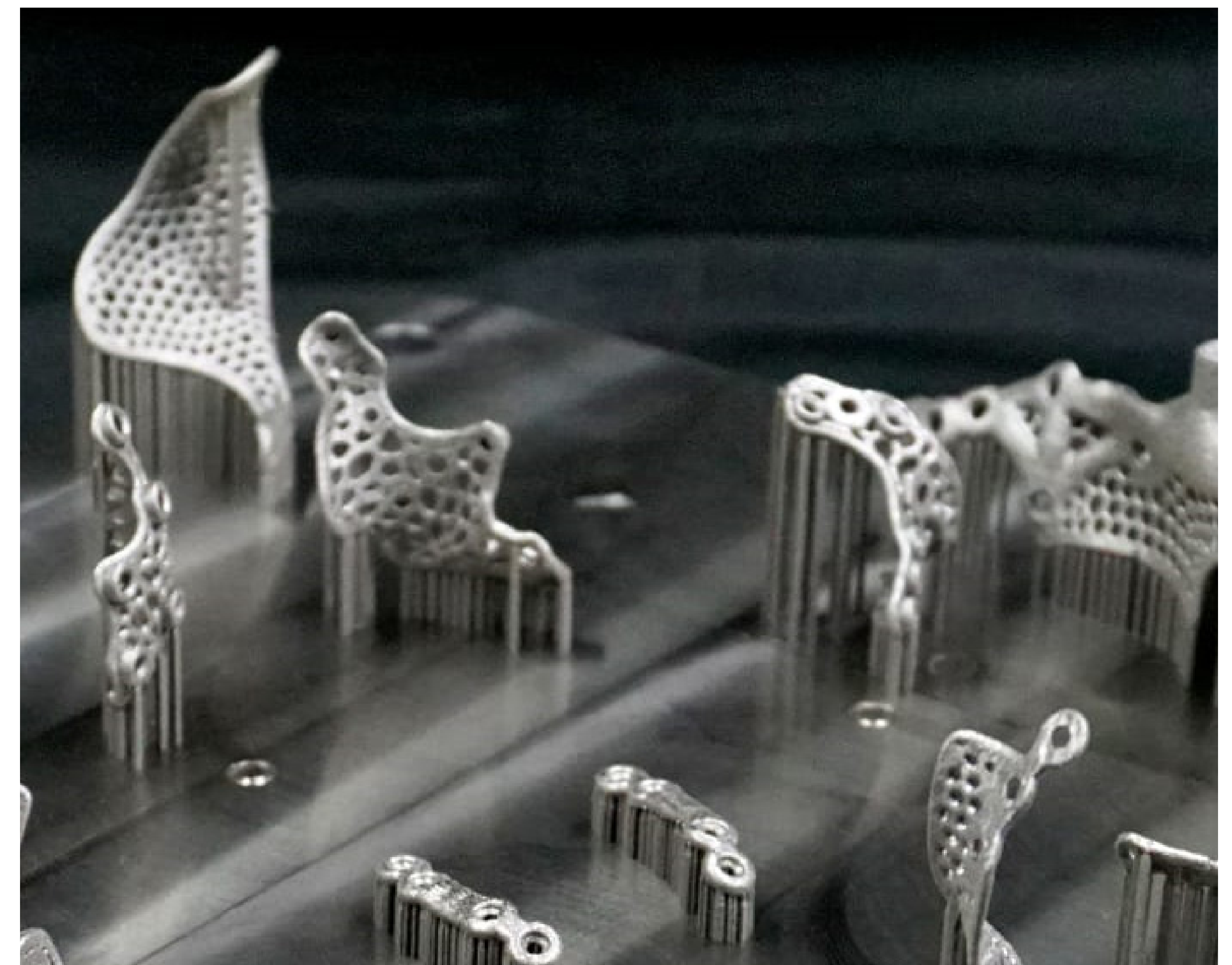
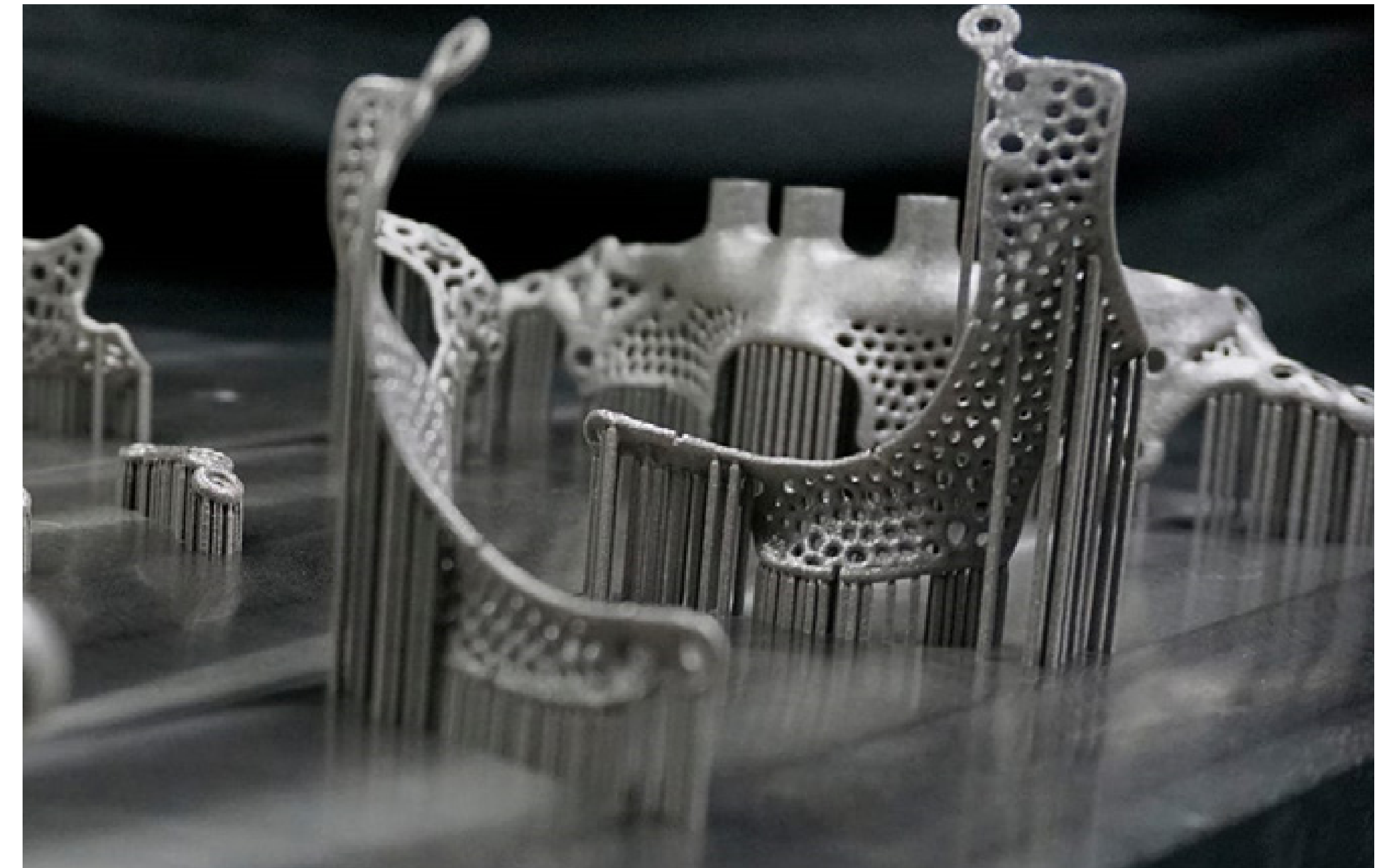
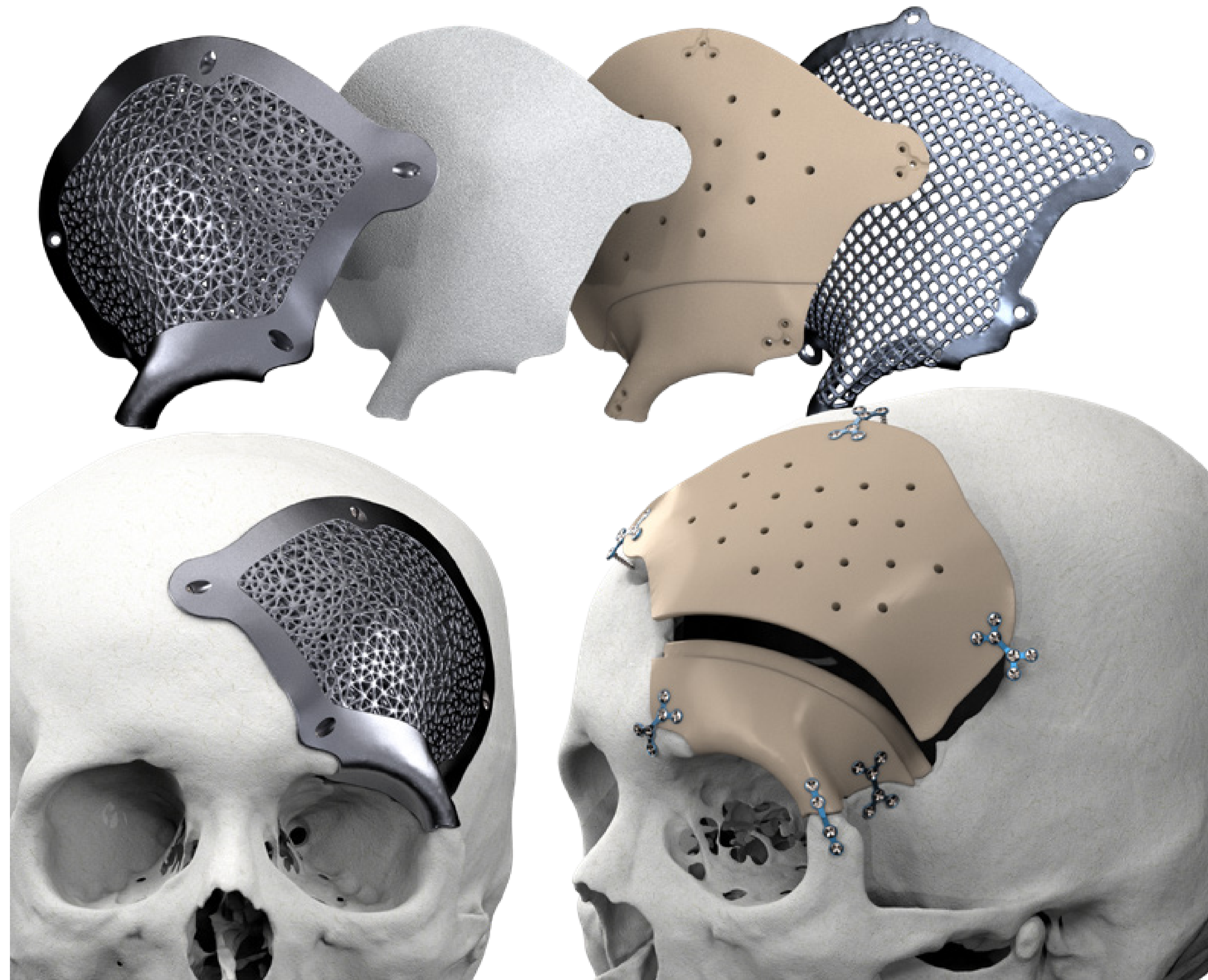




Research & Design Consultant

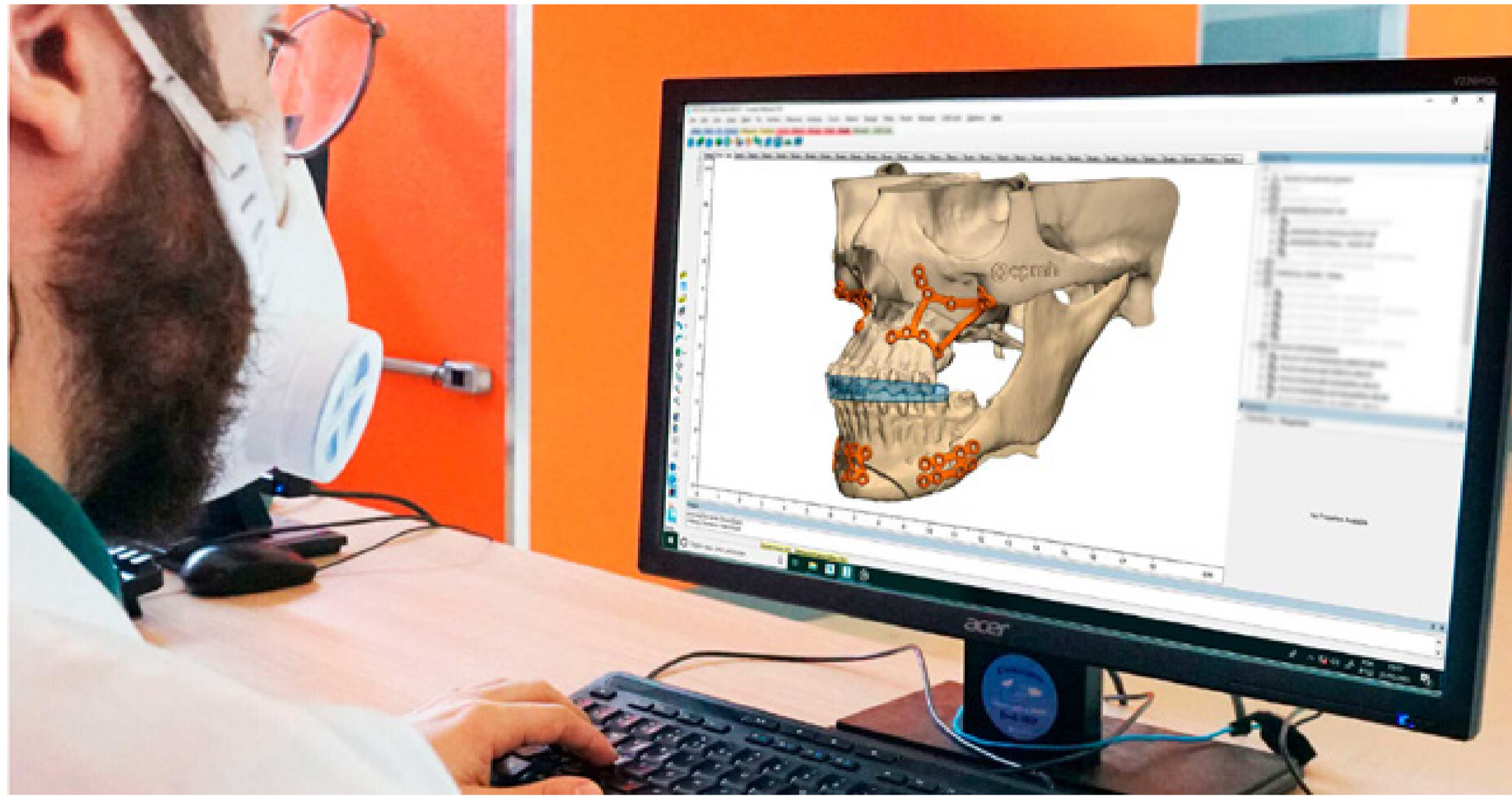
This role typically involves blending medical research, design expertise, and problem-solving skills to improve and create healthcare innovative devices. Translating clinical requirements into design solutions, complex geometries (like bone structures) and digital models, allowing structural analysis to simulate and predict surgical outcomes and mechanical performance.

Consultant and collaborations for papers, publications and research projects. Commercial representations, content creation and technique demonstrations in cadaver labs, training camps, and congresses.



Design For Manufacture (DFM)

With expertise and knowledge of industrial processes, the design problems can be adapted to the needs and requirements of the material, taking advantage of the benefits of any process used, whether additive, subtractive, conformative or mixed, this includes industrial 3D printing and CNC machines among others. Here I was working under device regulations and applying Quality Management System (QMS) for the design, validation and documentation of the project, ensuring that the designs and processes used were safe and compatible.



CAD Design +800 CASES

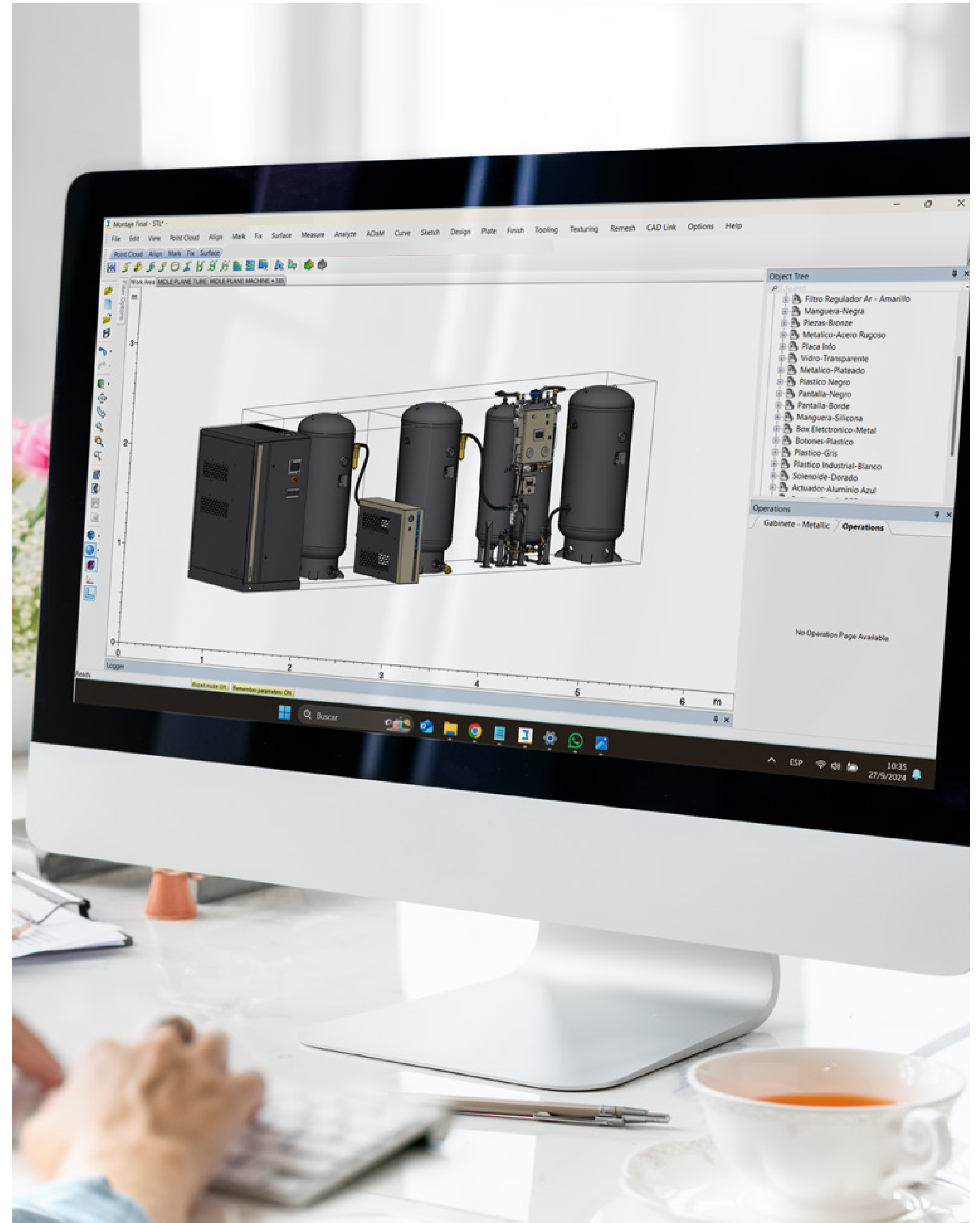
I translated the segmented anatomical models into detailed, functional medical orthopedics and maxillofacial devices. Working in close collaboration with surgeons and companies, designing implants adhered to strict medical and ergonomic requirements, focusing on biocompatibility, functionality, and patient safety. Each project was tailored to the specific needs of the patient and the surgeon, ensuring precise surgical outcomes and helping improve life quality.

Rebori O2

Product Visualization

This project centered on transforming rough product images into detailed 3D models to create realistic renderings and animations. These visual assets were used for marketing purposes across various platforms, including graphic design, social media, and the client's website, improving the overall presentation and appeal of the product.





CAD from Photographies

By analyzing the provided images, taken in low-light factory environments and/or with poor quality resolution, I created 3D detailed representations of the product, ensuring all key features and components were preserved. This approach allowed complete control over the visual output, eliminating the need for perfect photography and providing flexibility for future marketing needs.

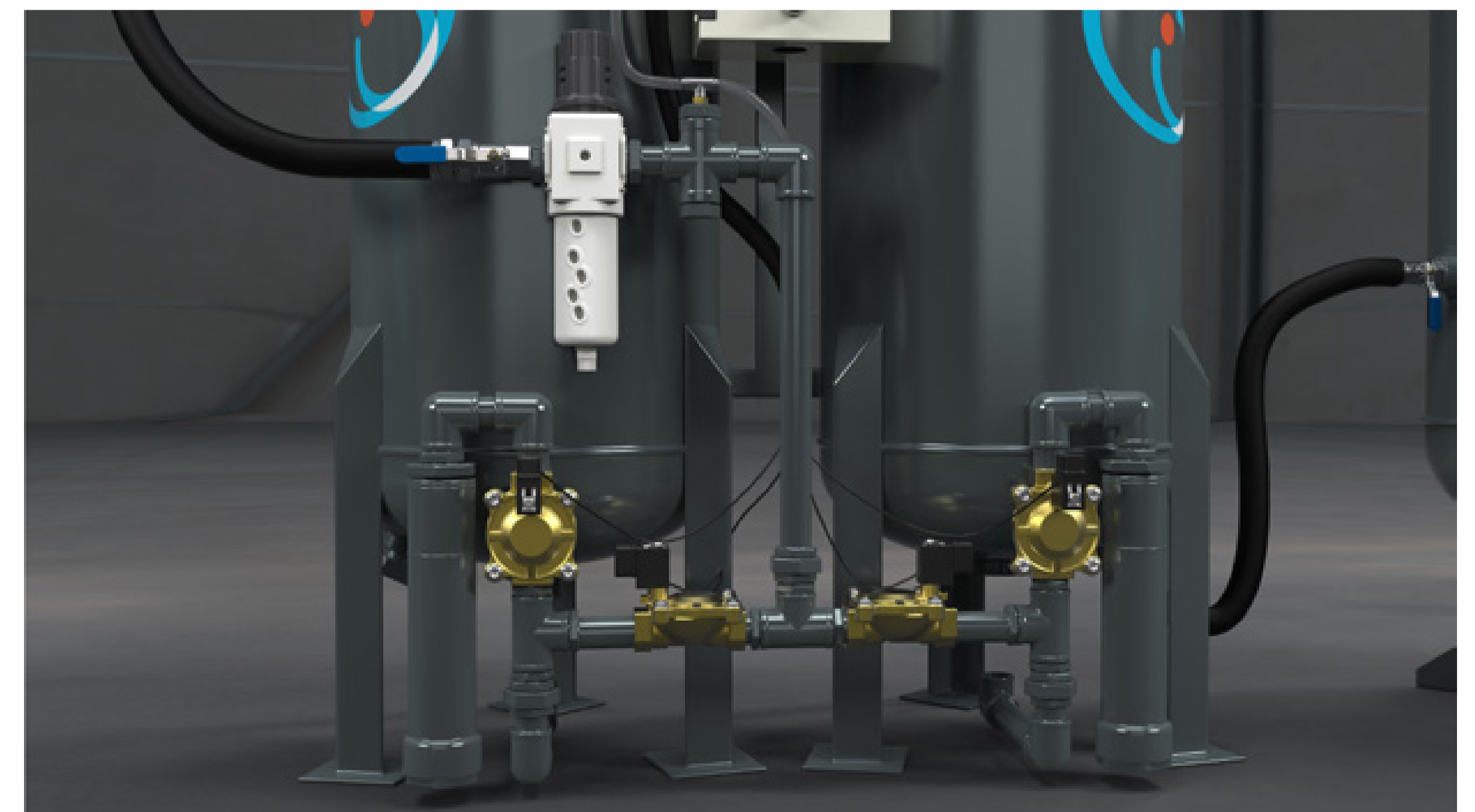


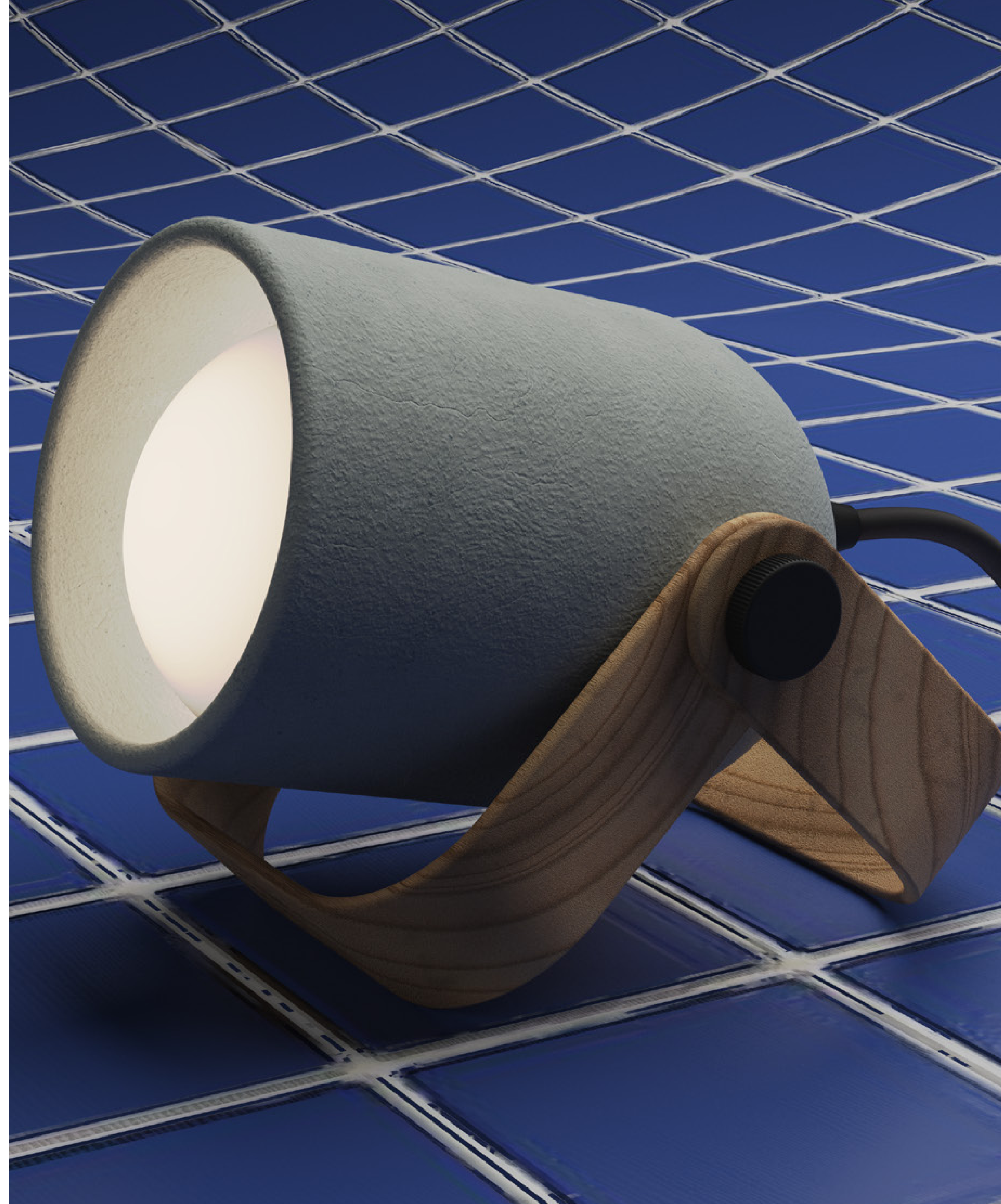
Image Renderings

I moved on to generating high-quality renderings that emphasized the product's features and aesthetics. Using advanced rendering techniques, I created realistic images that matched the desired visual style. Additionally, I developed animated sequences that highlighted the product's functionality and use cases, delivering a dynamic and visually appealing solution.

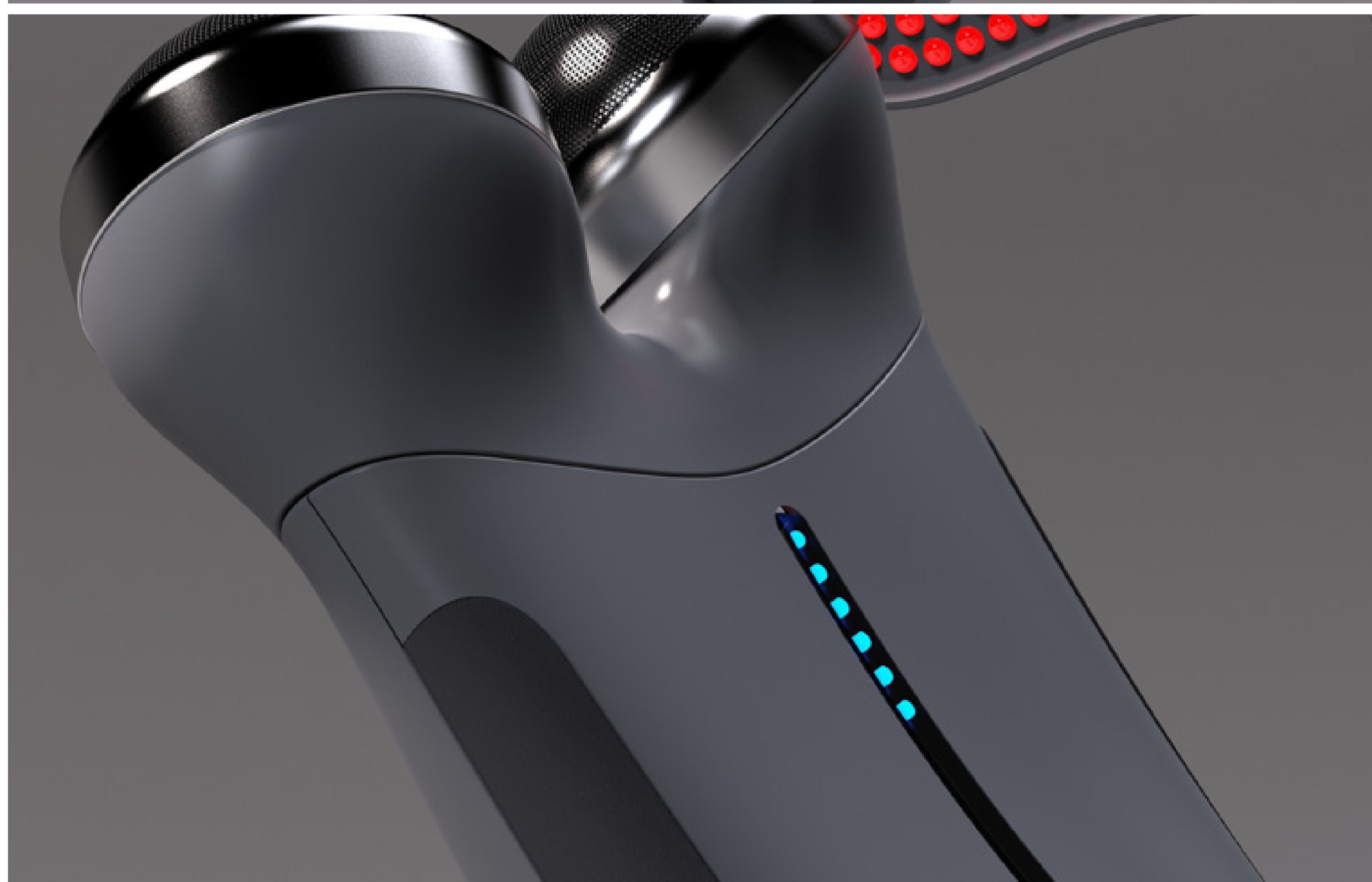
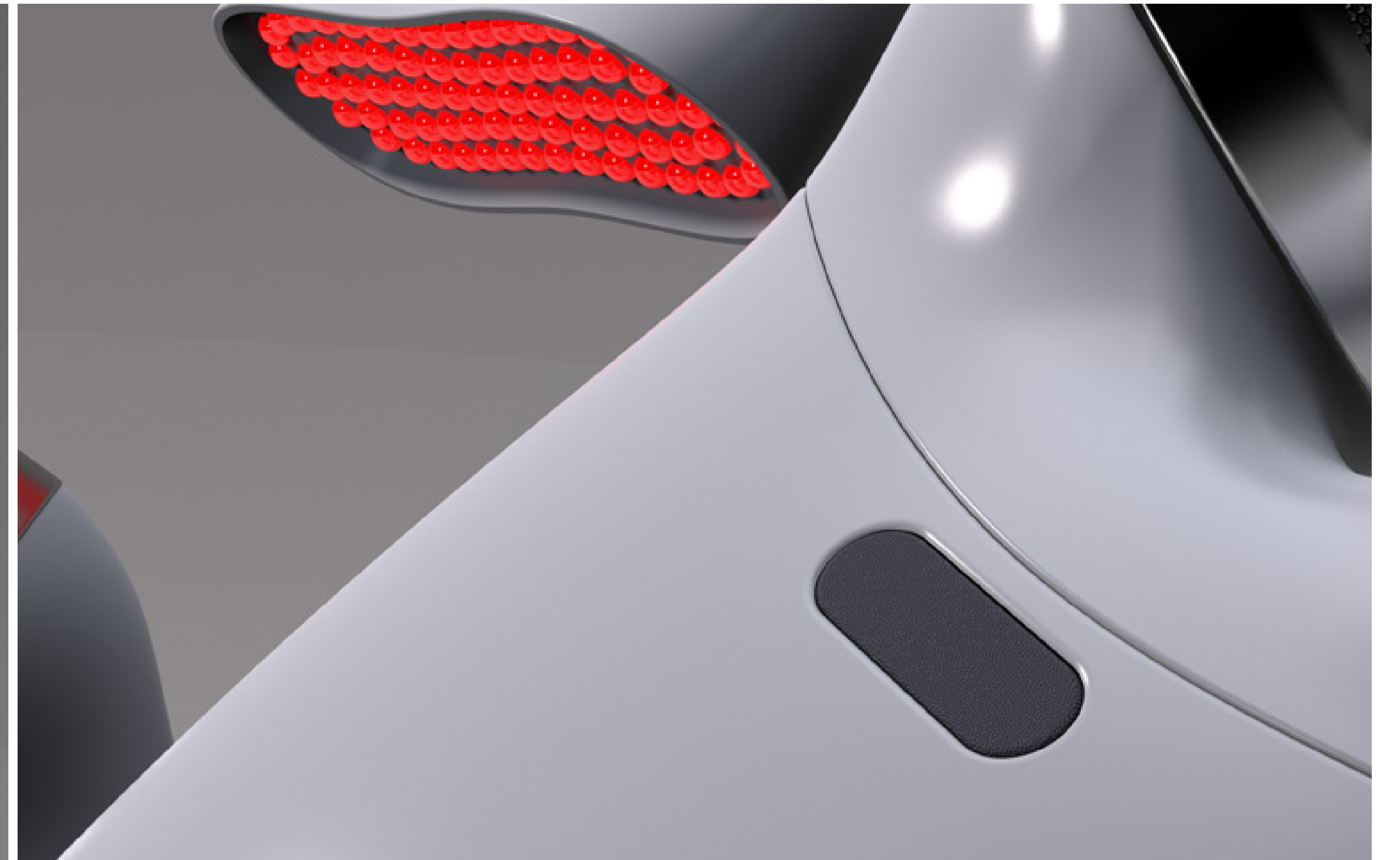
3D Visuals

Rendering Exploration

Here are some others rendering and scenes explorations, all of them goes from 3D modelling, specific material construction and lighting setups to showcase the model's form, textures, and finishes.









Thanks!

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