Port-folio.

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About

An ambitious creative powerhouse from the kingdom of Saudi Arabia with a Bachelors degree in Industrial Design and a Minor in Entrepreneurship from Pratt Institute in Brooklyn, New York.

Being born in Saudi Arabia, the design field was a ubiquitous and prominent scene that I've had the privilege to surround myself with from a young age.

Along my journey I've had the privilege of working on notable projects that include a collaboration with NASA, designing souvenirs for the Museum of the City of New York (MCNY) and creating a personal intelligence system designed for the future of spatial computing.

Im a highly solution oriented designer obsessed with systems and I am constantly infusing every pursuit with an unwavering commitment to excellence through the rush and challenges of creation.

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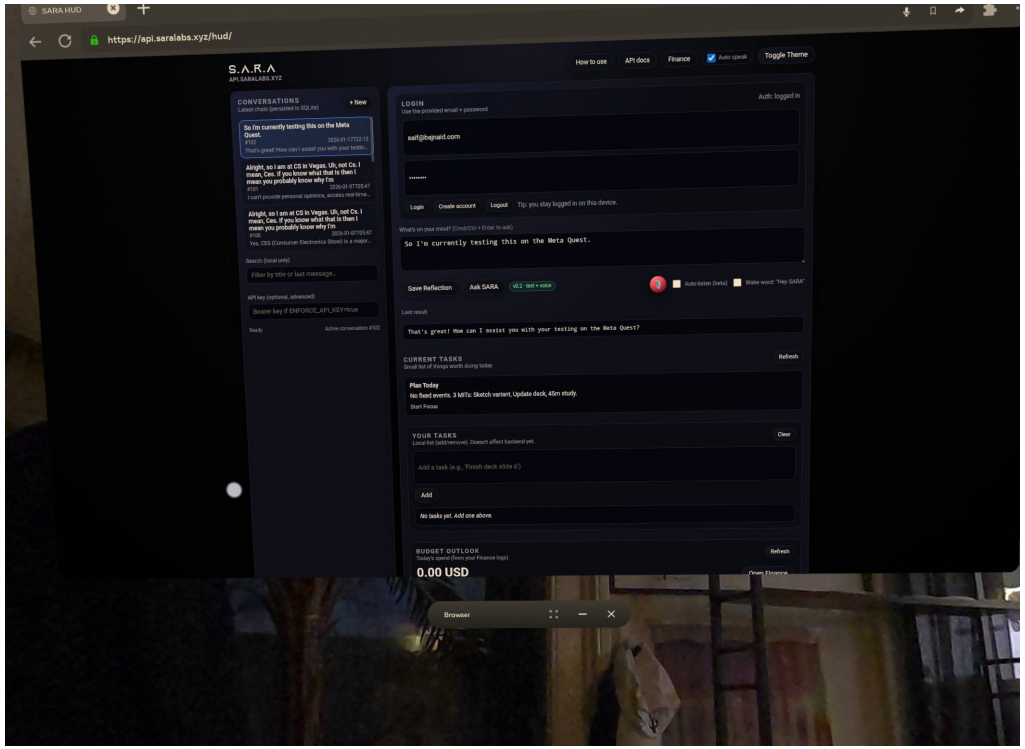
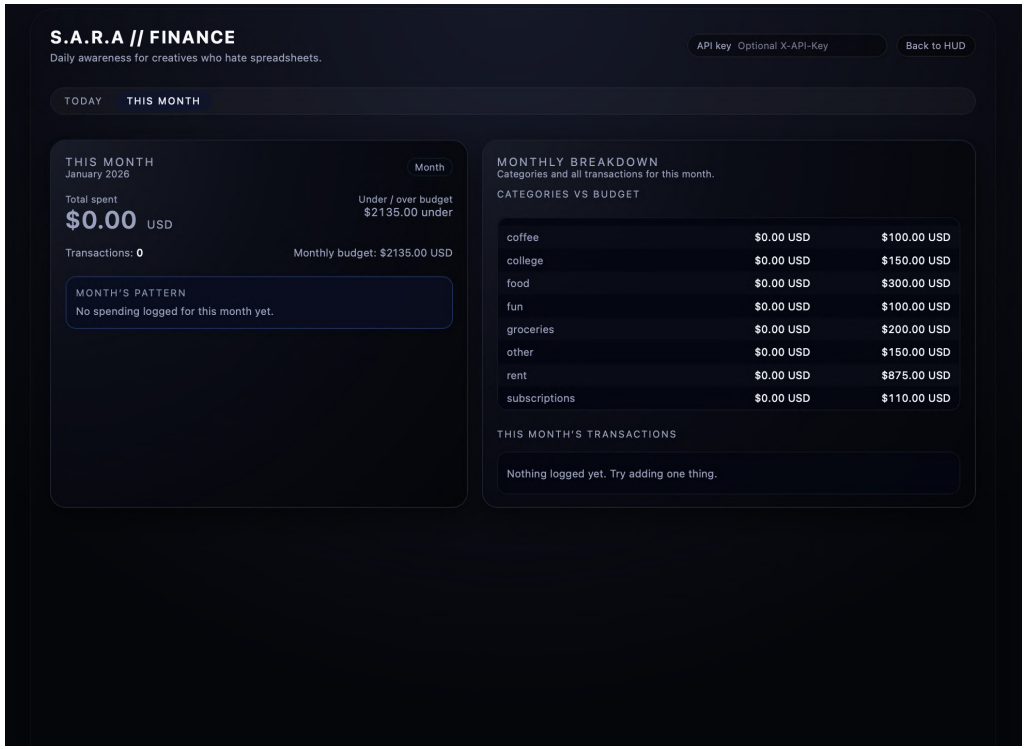
Project number 1

S.A.R.A (Smart Augmented Reality Assistant)

S.A.R.A started off as a passion project that stemmed from an idea in 2018, the solution it aims to bring is to have a unified system for idea generation, brainstorming, personal financial tracking, note captures and easy access to information on the internet; without having to use your phone all the time.

After sitting with the idea and prototyping use cases, S.A.R.A. evolved into a personal intelligence system designed for the spatial era. It explores how augmented reality and AI can reduce cognitive overload by externalizing memory, priorities, and decisions into a calm, persistent spatial interface. Rather than automating the user, S.A.R.A. assists high-agency individuals by acting as a personl, always-present layer of intelligence.



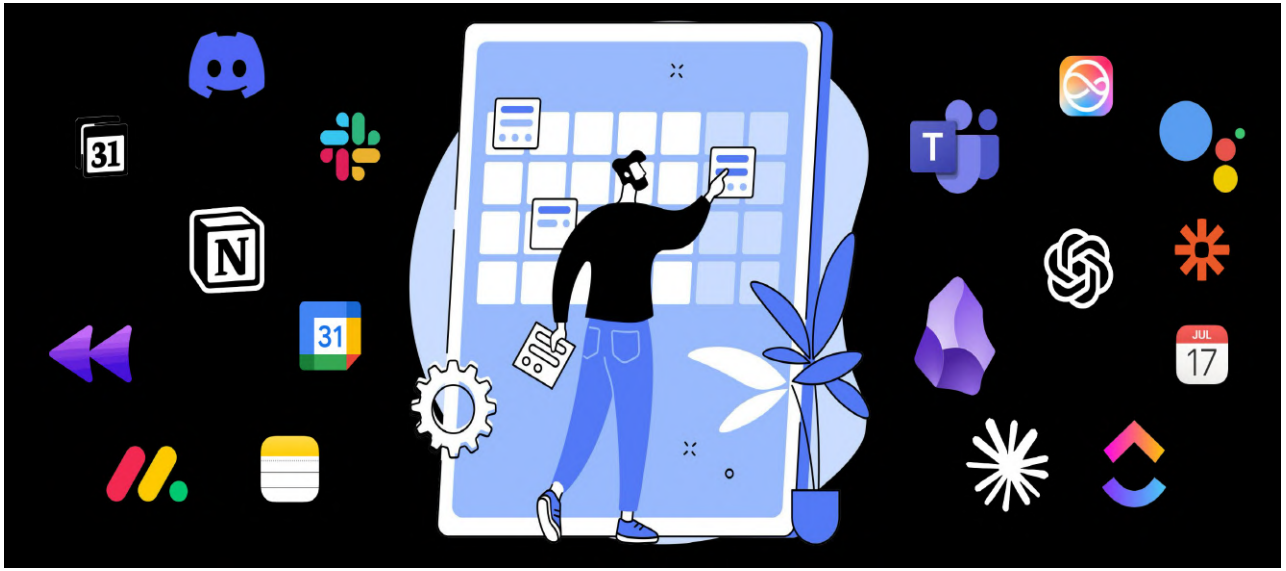


Problem

The problem was personal, I didn't want to rely on the phone due to all of its distractions and I needed a system that felt like my own safe haven for ideas.

Keeping an open mind for scalability and replication, the main issue was that current modern tools fragment attention. Tasks, reminders, finances, and long-term goals are scattered across apps, notifications, and dashboards.

Existing assistants are reactive, voice-only, and context-blind, forcing users to constantly re-explain intent. The problem is not lack of tools, as we have thousands of them on the market and thousands are popping up every day; rather the issue was it's lack of coherence, which S.A.R.A aimed to solve and is positioned to solve it for the spatial era as well, hence the name S.A.R.A (Smart Augmented Reality Assistant).

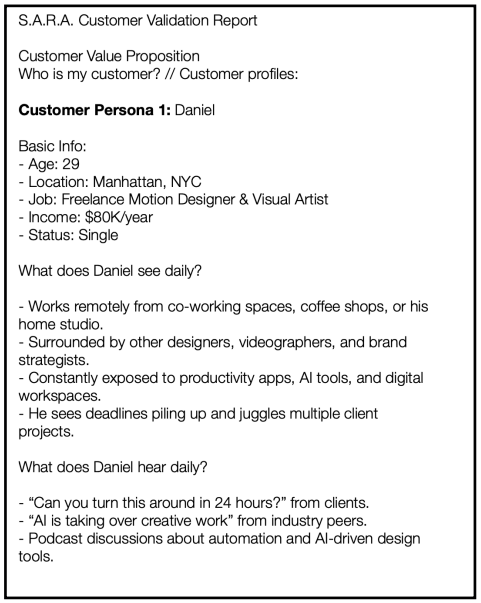


Research

The research done with scalability in mind. I started off building customer profiles and interviewing people to validate the idea of the project (left image), then I ventured into plotting out the numbers and to see how much it would take to get this project to the ideal vision(top right image).

Once having a customer profile and understanding the unit economics of the project, I created a competitive landscape to understand the scope of the field and where other softwares and companies currently lack and what gap S.A.R.A would fill while also creating an overview of the market including the total and serviceable adressable market.

At the end, I had all necessary components to compile a well thought and thorough pitch deck.



S.A.R.A. Customer Validation Report

Customer Value Proposition
Who is my customer? // Customer profiles:

Customer Persona 1: Daniel

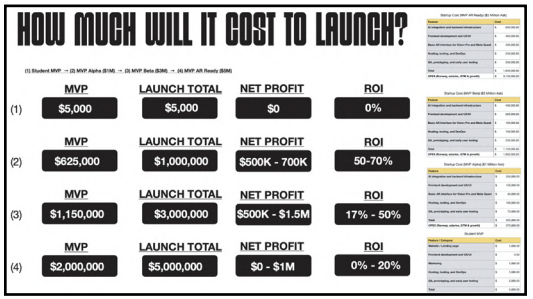
Basic Info:
- Age: 29
- Location: Manhattan, NYC
- Job: Freelance Motion Designer & Visual Artist
- Income: $80K/year
- Status: Single

What does Daniel see daily?

- Works remotely from co-working spaces, coffee shops, or his home studio.
- Surrounded by other designers, videographers, and brand strategists.
- Constantly exposed to productivity apps, AI tools, and digital workspaces.
- He sees deadlines piling up and juggles multiple client projects.

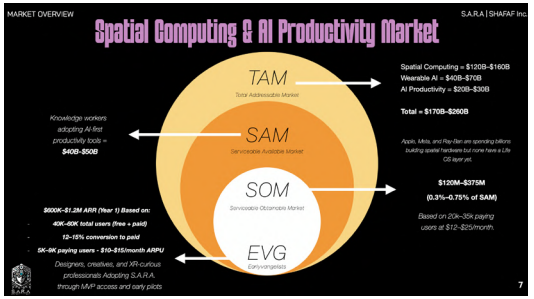
What does Daniel hear daily?

- "Can you turn this around in 24 hours?" from clients.
- "AI is taking over creative work" from industry peers.
- Podcast discussions about automation and AI-driven design tools.



HOW MUCH WILL IT COST TO LAUNCH?

	MVP	LAUNCH TOTAL	NET PROFIT	ROI
(1)	$5,000	$5,000	$0	0%
(2)	$625,000	$1,000,000	$500K - 700K	50-70%
(3)	$1,150,000	$3,000,000	$500K - $1.5M	17% - 50%
(4)	$2,000,000	$5,000,000	$0 - $1M	0% - 20%



Process & Tools used

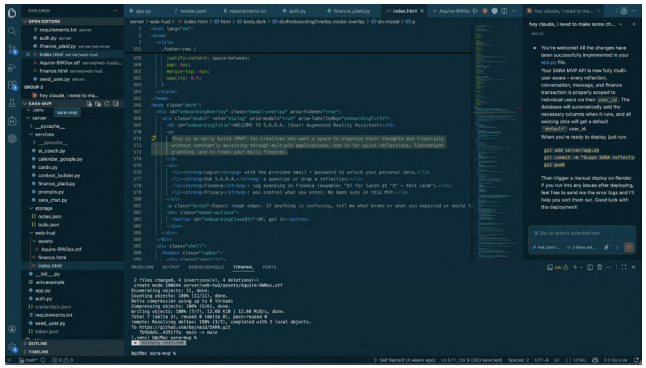
The first step was outlining the project and what features need to be included, I used Milanote to visualize the architecture.

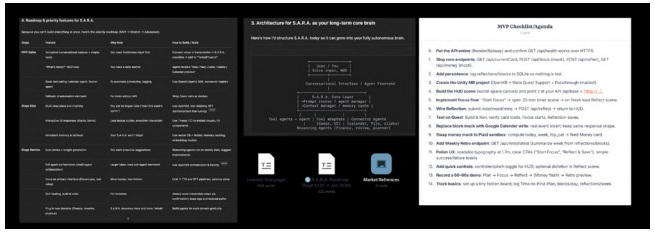
I went to ChatGPT for the execution and of course I needed to implement an environment to run the code, and thats when I started using VScode to build both the backend and the frontend of the code.

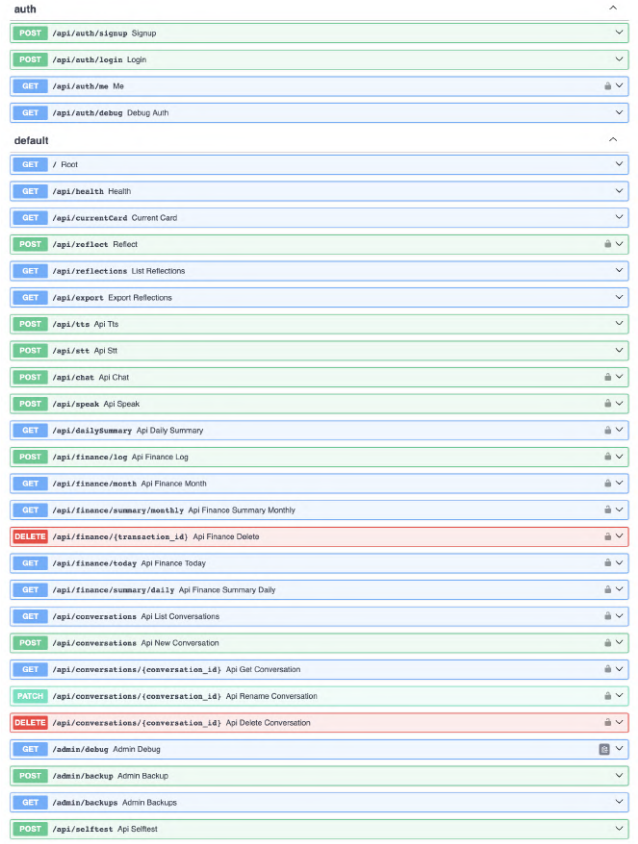
My flow was mainly writing prompts to ChatGPT and Claude with the full end goal described prior and creating a step by step plan and implementing and testing on VScode.

To fully run the outcome, I used a cloud application platform called Render, where the project is currently being hosted.

At the end, I built a landing page using a program called Replit, and redirects you to the product.







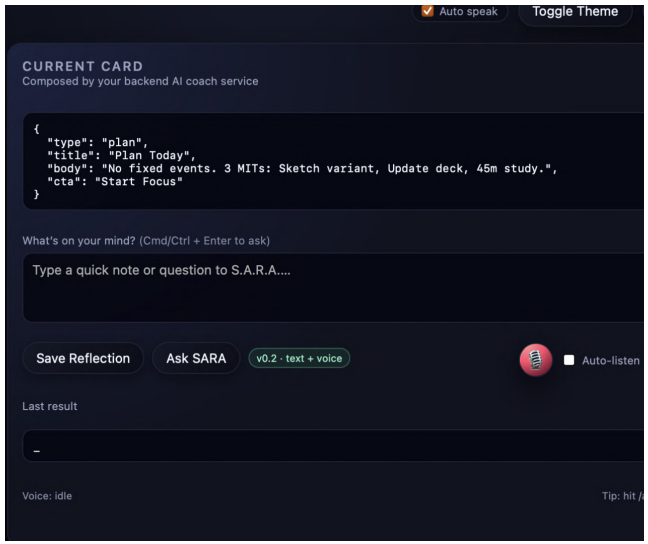
Prototyping & Iterations

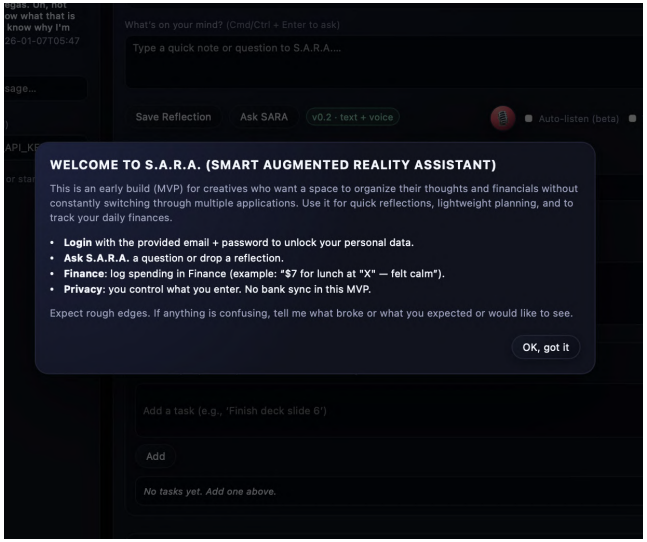
Since I started off with the backend and overall vision of the architecture, this first series of iterations came from iterating what features I should focus on.

All prototyping was done gradually throughout the completion of the project from VScode and seeing the deployed visual result on render.

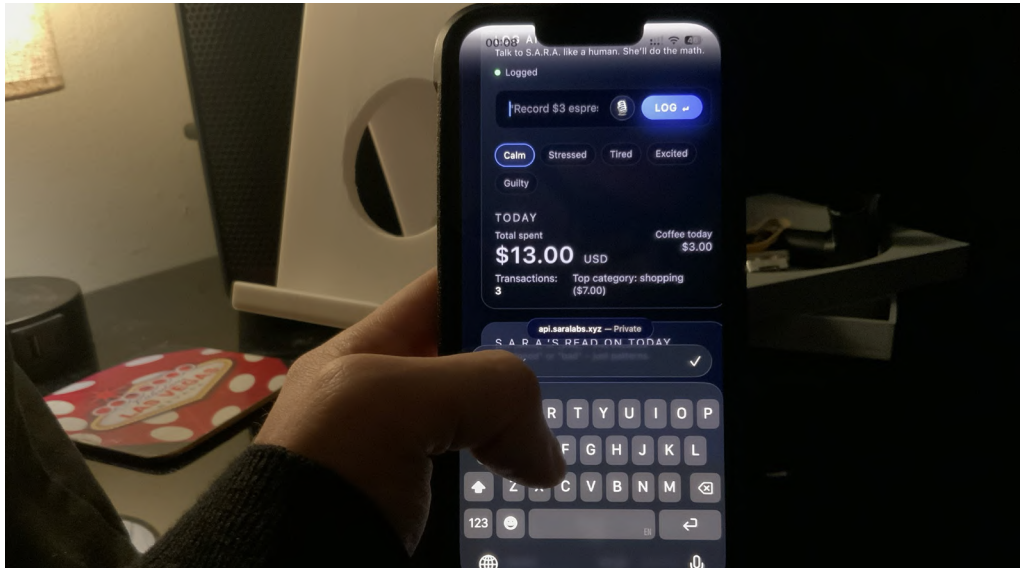
The tweaks were made continuously on the backend, so the tweaks were not visually visible but once the frontend was ready to be tackled, thats where the tweaks started to become visible.

User experience and usability was important, testing informed me that the login should be the first thing people see, but before that how were they supposed to know what to do? So an instructions page is the first thing that pops up, then you get into the overall system.





Learning Outcomes & Next Steps



Overall, getting an idea to come to life with only a vision and no prior knowledge of how to code was a challenge. It was a challenge I wanted to see through no matter the cost, as I was solving a real world issue, or getting a step closer to solving it.

I learned a lot about what it takes to create a functional software program that can be scaled into a company in the future. I created a thorough and well though pitch deck that is always under refinement but is investor ready with a product to prove it as well.

A really beneficial lesson was to always start with the backend, which is considered the skeleton of the whole project, and imagine how the end product would look like from the first time you think about it. Once the backend is done and the code can stand alone is when you tackle the frontend, which is the aesthetics of the project.

Next steps would be to follow through with my GTM (Go To Market) strategy and keep on testing with users and refining till the product is just right.

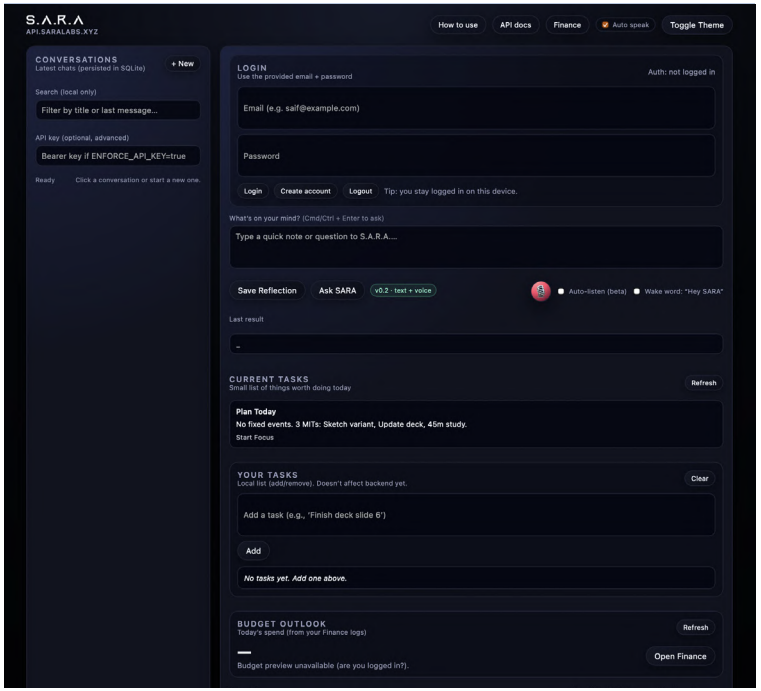
(Top image): Finance section of S.A.R.A on iPhone, recording 3 transactions of the day and it categorizes it based on rules set such as “MTA = Transport” and so on.

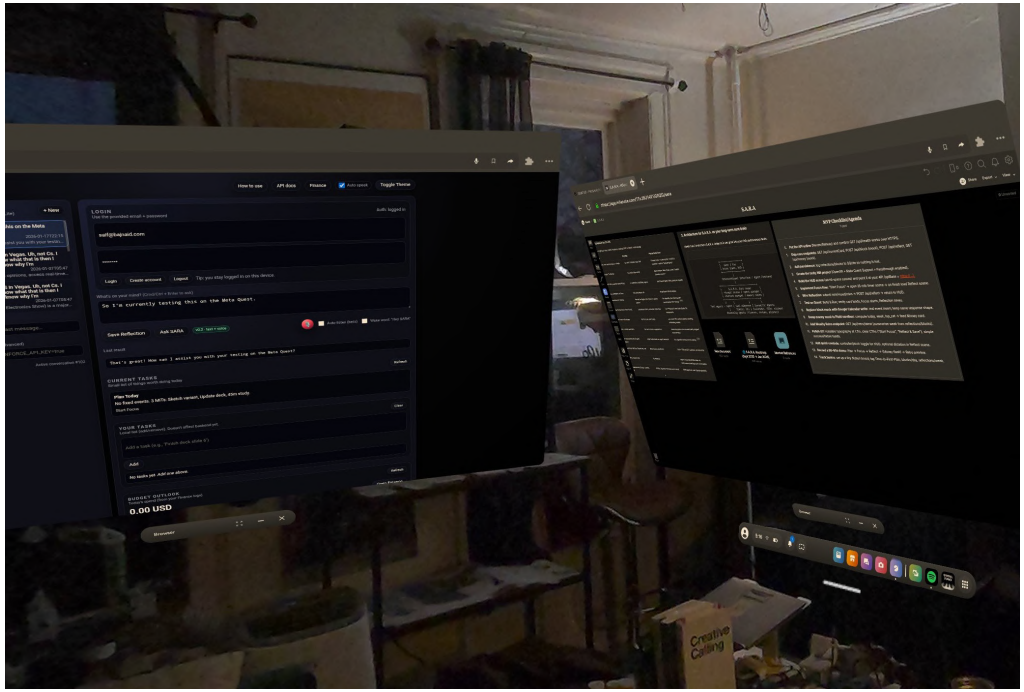
(Left image): January 2026 Version of S.A.R.A home screen with logo and login pre user sign in, once a user signs in its populated with their information from a saved database.

(Right image): Testing in VR workflow with Meta Quest.

Try it out here:

shafafdesign.com





Project number 1

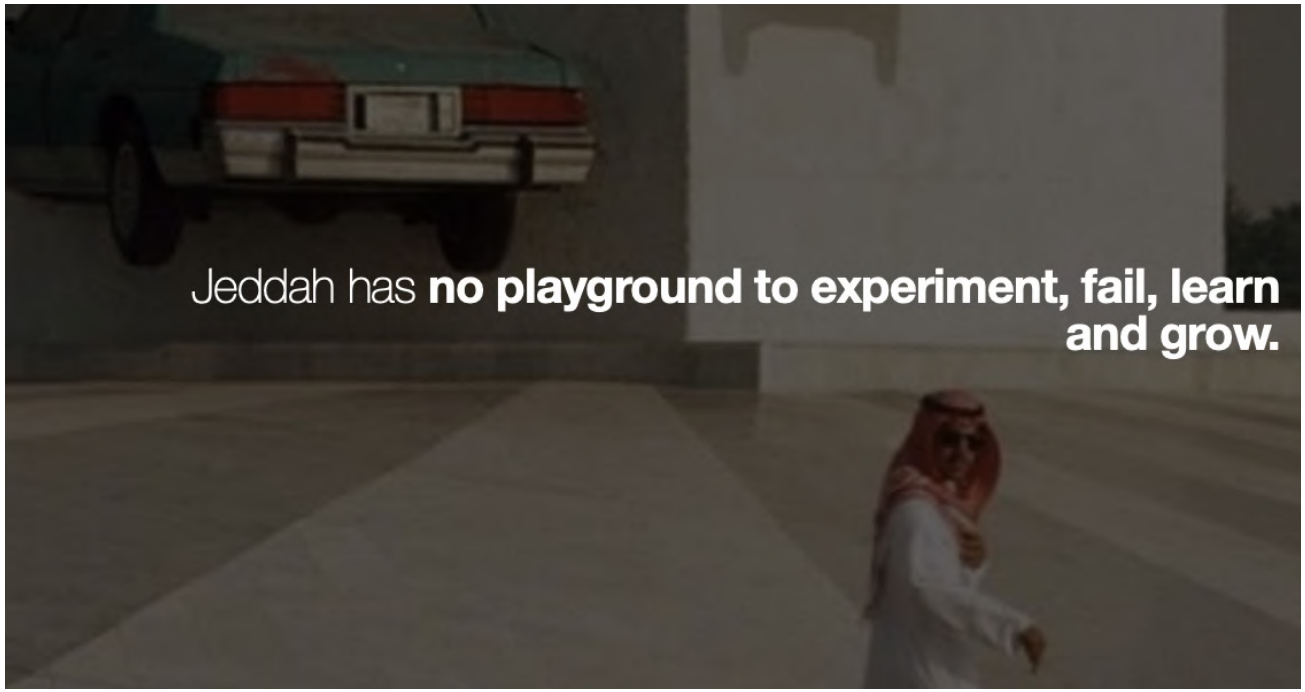
SHAFAF: A catalyst for creative youth in Jeddah, Saudi Arabia.

SHAFAF is a conceptual project and was done for a design studio I took called Social Change. The point of the studio was to come up with a solution for a social issue, I chose to focus on a social issue in the place I grew up in which is Jeddah, Saudi Arabia. The issue was that Jeddah had no place for creatives to connect, create and experiment freely. This is not the case today as there have been many initiatives to grow creativity since I left the kingdom back in 2022, however the solutions that are being provided are still in its infancy stage and still lack multiple aspects. SHAFAF is an attempt to fill those gaps for a greater future for the creatives of Jeddah.

Problem

The assumed problem due to first-hand experience was that “Creativity is fragmented and not celebrated nor nurtured in Jeddah” other problem statements arose such as that “Jeddah has no playground to experiment, fail and grow” and that “Jeddah’s youth lack creative input”.

To further strengthen those problem statements, I created a survey and spread it around the groups I’m involved in and asked fellow creatives within the kingdom to answer it as best as possible to validate and find out the exact pain point which informed the overall direction of the project.



Research

The survey explored what was missing in the creative scene as a whole and what current institutions lack and existing behaviors.

In addition to the thorough survey, I conducted case studies on existing institutions that aimed to solve this problem within the kingdom.

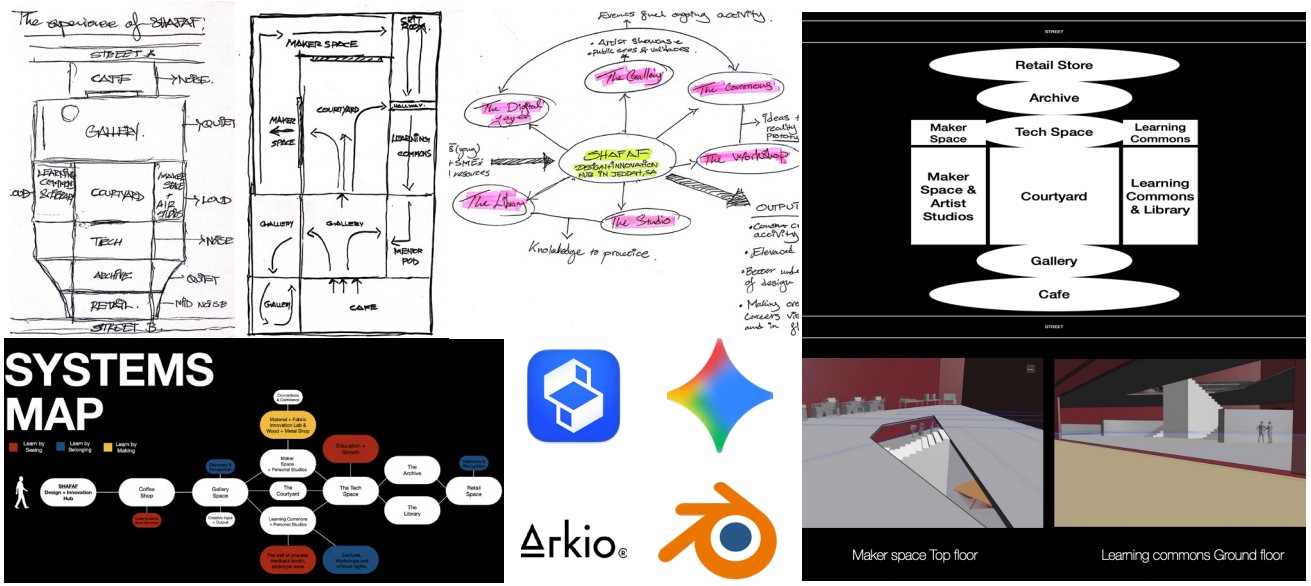
Only one institution exists within Jeddah (Hayy Jameel) and only one other exists in Riyadh (JAX District), the capital of the kingdom.

To further strengthen the project, I conducted ethnographic research of citizens aged 16-30 within Jeddah and I also built ideal customer personas and scenarios of the proposed solution.

Process & Tools used

After completing initial research, I began by physically sketching the space with miniature human figures to establish scale and overcome the initial barrier of starting. I quickly realized a clear floor plan was needed before form-making, so I developed multiple floor plans and a system map outlining spatial connections, while simultaneously documenting the process in a presentation that functioned as a living process deck.

The project utilized a range of tools: Midjourney for early AI visualization, Blender for initial 3D modeling, Arkio in AR to experience the space at scale, Shapr3D for final CAD development, and Gemini to produce realistic renders from model screenshots.

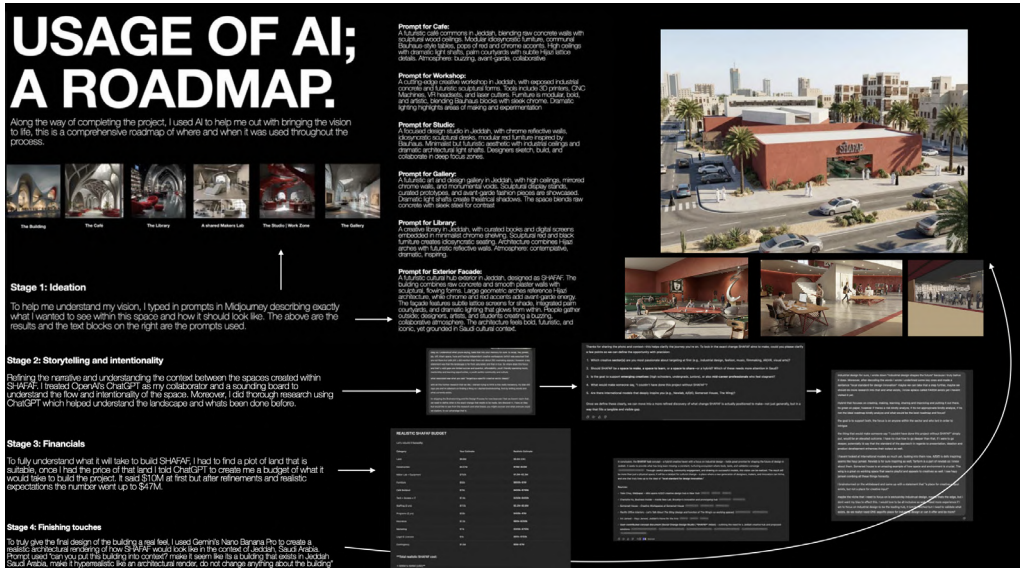


Prototyping & Iterations

The project went through many iterations until reaching a point where the vision could be communicated. Noticing that my model making in reality did not fully illustrate the building I had in mind, I started to 3D model it and present it to my peers and get feedback in regards to the flow of the space. Once i reached a space that was intentionally designed, I populated it with the stuff you would find within SHAFAF, from the idiosyncratic tables to the machinery and common rooms being used by people who are creating within the space.

When my 3D model was ready, the software could not handle the amount of solid bodies to render, so I took screenshots of the sections that were most important and gave it to Gemini to render without losing the intentionality nor attributes of the products designed.

Learning Outcomes & Next Steps



SHAFAF is a deeply personal project and one I intend to scale and build my career around, so I approached it as a real system rather than a speculative concept. I studied the full ecosystem including the community, users, and operations and in doing so I applied a business-centric lens by developing a business plan, model, SWOT analysis, and funding strategy as if the project were to scale beyond the studio. Treating it seriously as a system fundamentally improved the outcome.

Working under tight time constraints also taught me how to leverage AI effectively, using it to accelerate visualization without sacrificing clarity, intentionality, or the human aspect of the space. The project revealed the true complexity of building a centralized creative hub, from hiring and infrastructure to equipment and operations, and highlighted that reaching an idealized launch state would require an estimated $50M.

Next steps include piloting SHAFAF within existing spaces in Saudi Arabia in late 2026 and using those insights to refine and expand future hubs.

(Top image): A roadmap of how AI was used throughout this project, from ideation, visualization, copywriting and rendering.

(Left image): Final render of the Cafe space that includes an opening to the Gallery space as well.

(Right image): Final render of The Maker Space, where people go to create and get insight from mentors.

Project number 1

Inflatable Habitat Storage System: NASA

Within the Wearable Technology design studio at Pratt Institute, my colleague Ziyu (Mark) Nie and I were tasked with a challenge set by NASA to design a permanent storage system for an inflatable habitat.

The problem focused on the International Space Station's need for a long term storage solution for CTBs (Cargo Transfer Bags). Throughout the project, we learned how to design for space by addressing microgravity, payload constraints, and deployment requirements, while being guided by two NASA subject matter experts who acted as mentors during the process.

The project concluded successfully, and our team was recognized as Best Prototype at the competition held in Houston, Texas.

Problem

An inflatable habitat on the International Space Station needs a permanent storage system that utilizes handrails for maneuverability in its interior space (a cylinder with cross-sectional diameter of 20 ft).

The current storage system faces challenges of deployment methods, astronauts maneuverability, accessibility and storage efficiency. Our objective is to design a working prototype of a modular storage solution that efficiently accommodates multiple sizes of Cargo Transfer Bags (CTBs) while ensuring accessibility and organization.

The system will also incorporate handrails for astronaut maneuverability and will be compactly packed into a core before launch to meet volume constraints. (The image on the right is a courtesy of NASA and a representation of how CTB's are stored in the ISS.)

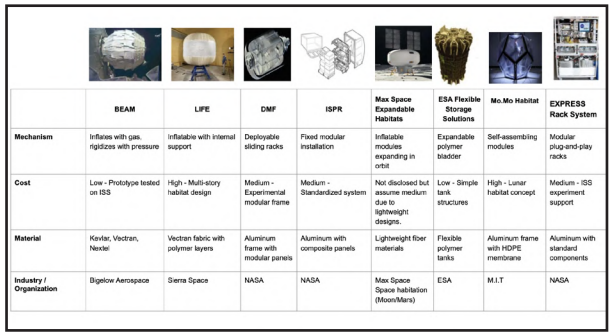
Research

Before trying to tackle the project, we took it upon ourselves to become subject matter experts in what we would be designing.

This required us to do extensive and thorough research. The research entailed reading 20+ academic papers and separating them into what is relevant and what is not and we ended up with 3 relevant academic papers.

In addition to creating a competitive landscape in order to understand what currently exists and what possible solutions have been pitched before.

Our competitive landscape consisted of existing solutions that have been proposed, adopted or hypothetical. This was done in order to gain further insight and also inspiration of how our proposed model would eventually look like.



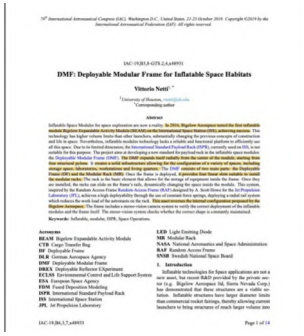
	BEAM	LIFE	DMF	ISPR	Max Space Expandable Habitats	ESA Flexible Storage Solutions	Mo.Mo Habitat	EXPRESS Rack System
Mechanism	Inflates with gas, rigidizes with pressure	Inflatable with internal support	Deployable sliding racks	Fixed modular installation	Inflatable modules expanding in orbit	Expandable polymer bladder	Self-assembling modules	Modular plug-and-play racks
Cost	Low - Prototype tested on ISS	High - Multi-story habitat design	Medium - Experimental modular frame	Medium - Standardized system	Not disclosed but assume medium due to lightweight designs.	Low - Simple tank structures	High - Lunar habitat concept	Medium - ISS experiment support
Material	Kevlar, Vectran, Nextel	Vectran fabric with polymer layers	Aluminum frame with modular panels	Aluminum with composite panels	Lightweight fiber materials	Flexible polymer tanks	Aluminum frame with HDPE membrane	Aluminum with standard components
Industry / Organization	Bigelow Aerospace	Sierra Space	NASA	NASA	Max Space Space habitation (Moon/Mars)	ESA	M.I.T	NASA

Master's Thesis in Aerospace Engineering

Preliminary design of deployable habitat for lunar outpost made by innovative material

Federico Cunaio

Politecnic of Turin
Academic year 2019/2020



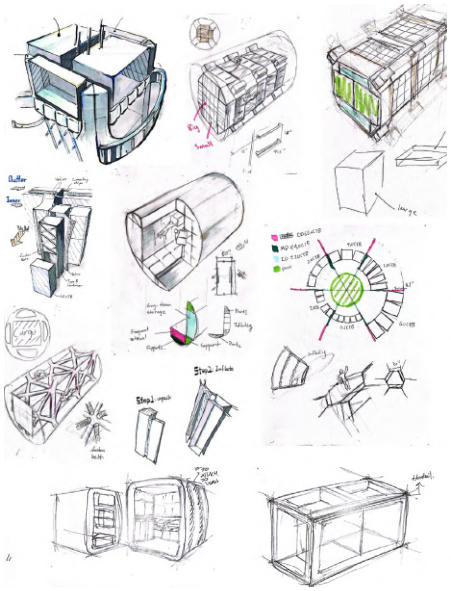
DMF: Deployable Modular Frame for Inflatable Space Habitats

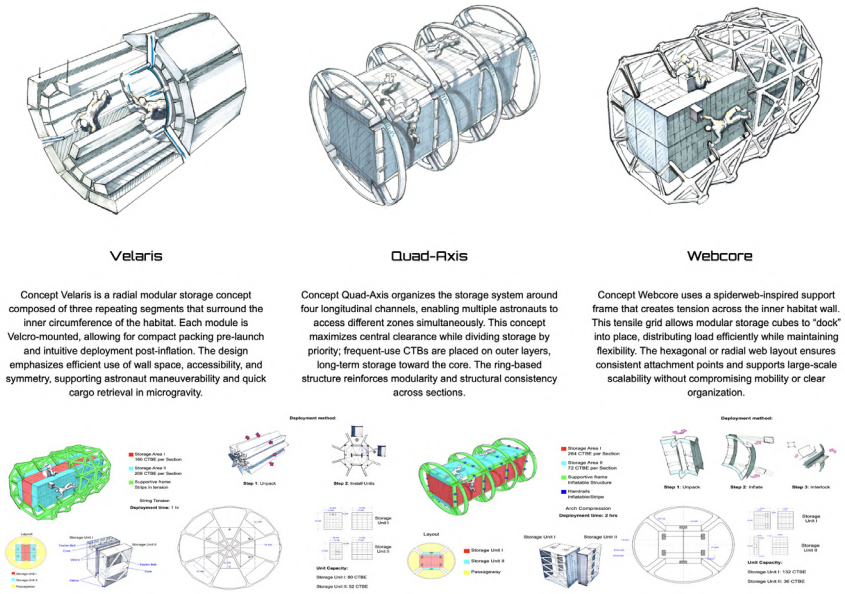
Vittorio Notti

Process & Tools used

After completing our initial research and defining the problem, we moved into concept development through sketching, discussion, and digital exploration. This phase focused on deployment methods, structural logic, and accessibility, resulting in a wide range of hand sketches that explored different geometries and mechanisms. From this ideation process, three distinct concepts emerged: Velaris, Quad Axis, and Telacore.

These concepts were refined and prepared for presentation through cohesive drawings and digital renderings. Throughout the process, we met with our NASA mentors via Zoom, first in early February for a discovery call and later in March to present our concepts and receive feedback. Based on these discussions, we were guided toward combining the strengths of Quad Axis and Telacore into a single, more resolved direction.

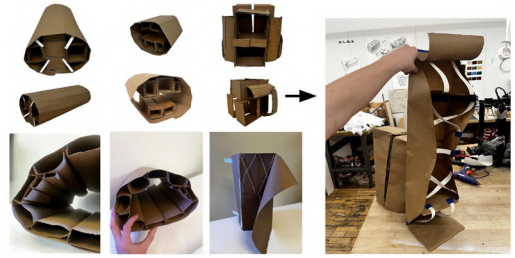


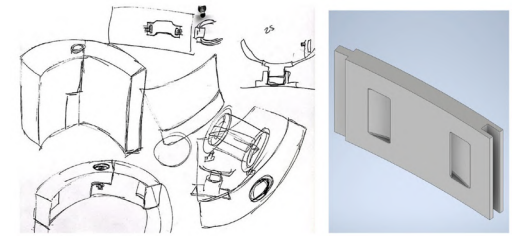


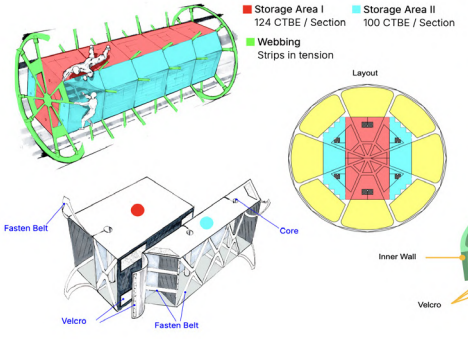
Prototyping & Iterations

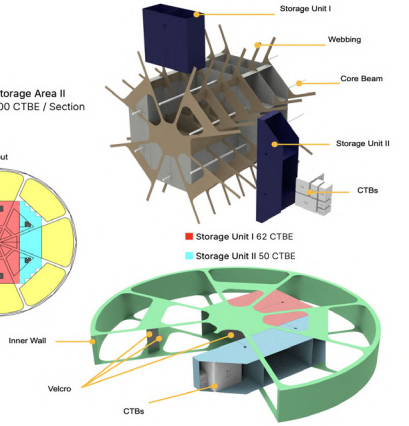
Once the concept was finalized, we transitioned into physical prototyping to validate behavior, scale, and material performance. We began with low fidelity mockups using brown paper and muslin to test form, flexibility, and interaction in a fabric-based system.

After refining the pattern through multiple iterations, we translated it into final materials and produced a full prototype of the storage module. To contextualize the system, we modeled and 3D printed a section of the inflatable habitat wall at a 1:6 scale, producing multiple components to form a circular structure measuring 50 inches in diameter. Nylon straps and buckles were integrated to allow adjustable tension, and multiple CTB sizes were 3D printed to evaluate fit and capacity within the module.









Learning Outcomes & Next Steps

Presenting our idea in Houston to other students participating in the competition in addition to multiple representatives from NASA was both a privilege and an honor for the both of us.

We enjoyed all the insights gained as we also networked after the presentation with students from other schools who attempted to tackle the same challenge we did.

After our presentation, we received strong feedback from our mentor Dr. Carson Ohland, who noted that if this solution were implemented, it would likely be adopted within the next 20 years.

This timeline leaves room to further refine the system through material testing, full-scale prototyping, deployment simulations, and long-term durability studies.

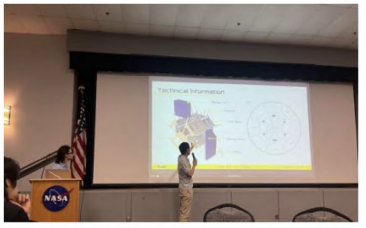
Overall, we greatly enjoyed the project and look forward to potentially building on these areas for improvement.

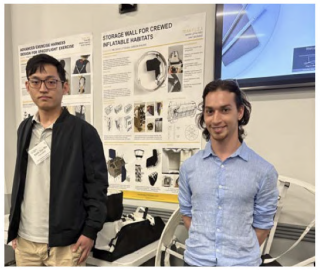
(Top image): This full-scale module demonstrates our final storage unit design. It includes 3D-printed CTBs, adjustable buckle straps, and a Velcro-backed fabric shell. The unit attaches directly to the tensioned circular frame using pre-defined mounting points, confirming proper fit, secure attachment, and spatial efficiency within the inflatable habitat.

(Left image): Our final poster and feature closeup

(Right Image): Presenting at the Johnson Space Center at NASA + Award.

Kindly click here for an in depth process book covering the whole process.





Thank You

Thank you for taking the time to explore my portfolio. Each project showcased here represents a chapter in my creative journey, highlighting my passion for design and beyond. I hope you found inspiration and insight into my artistic vision and capabilities.

For inquiries, collaborations, or further discussions about my work, please feel free to get in touch. I look forward to the opportunity to create something extraordinary together.

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