Origami Master™

origamimaster.com

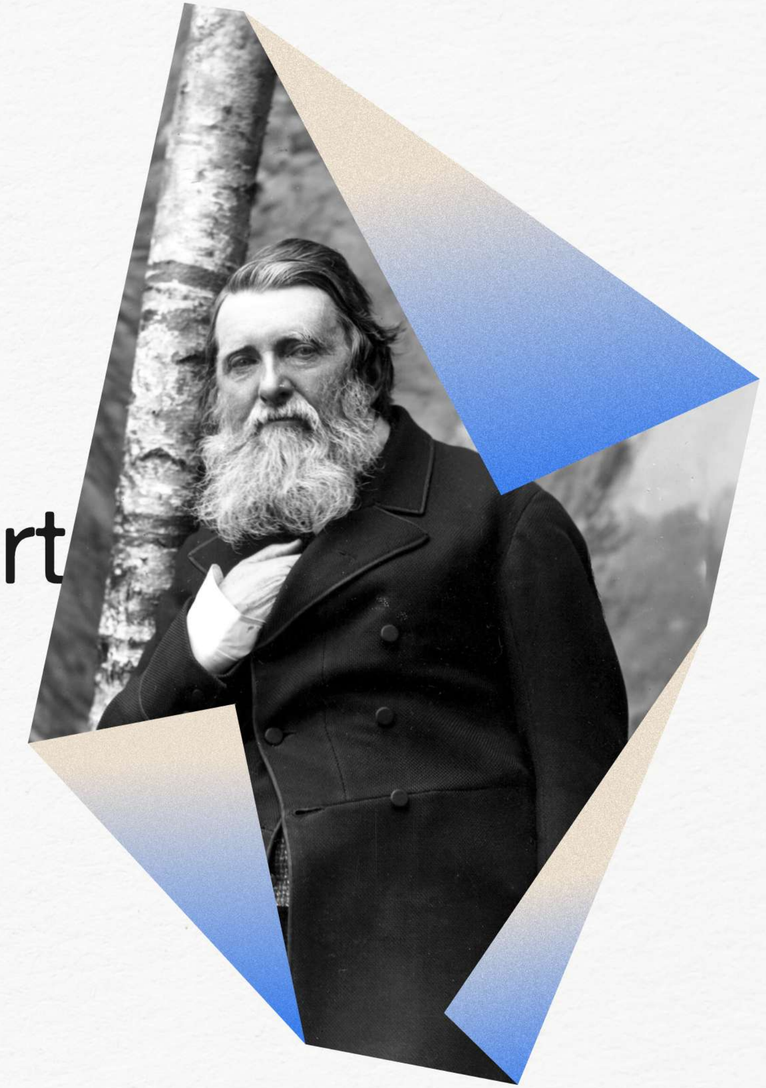
Origami Master

01

Product Vision

“Fine art is that in which the hand, the head, and the heart of man go together”

John Ruskin 'The Cestus of Aglaia, the Queen of the Air' -1870



Our Product Vision

Arts & Crafts

It is amusing to think an ancient practice - based on handcraft - would benefit so immensely from a contemporary device. Origami can be created and enjoyed in a more organic way through Meta Quest technology by integrating hand tracking, MR and AI, among other key features, making this a memorable and intuitive experience.

We created closed door survey sessions which highlighted existing usage data, future interests in lifestyle applications, and most importantly, evaluation of the Origami Master concept. We interviewed a wide range of people based in the US who own a headset device. The result? People love crafts, they always have, and even those who haven't ever tried Origami, expressed their desire to explore this new lifestyle application, immersing themselves into a whole new world of craft and shared creative spaces.

Spatial Computing

Our vision for the future of spatial computing is giving users the possibility to blend the digital with the tangible world seamlessly and build upon passion, beyond the known phygital experiences, beyond just entertainment. Origami Master aims to integrate the virtual in order to assure, when the user removes the headset, there is still an experience which transcends.

Lifestyle Survey Results

97% of participants would use their headset to learn a new skill or hobby.

85% of participants have never tried it but would be interested in learning how to do Origami in an interactive format.

92% of participants have done Origami and would be interested in learning Origami through a three dimensional tutorial.

80% of participants are either very or extremely interested in sharing their Origami creations, either physical or digital, on social platforms.

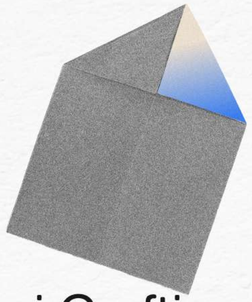
The What

Learn the art of folding paper like a master, starting with basic shapes all the way into complex sculptures. Users will be able to fold their own physical paper or virtual materials, in order to craft Origami pieces, making the best out of MR technology and hand tracking to bring even the most fantastical creations to life.

The Why

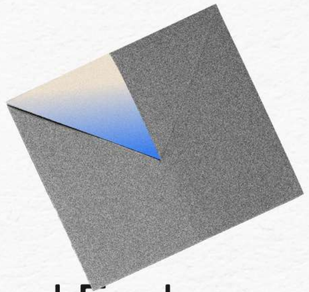
Following Origami tutorials can be hard, as folding movements are not easy to capture in static flat diagrams. A spatial app is a great way to make this activity easier and better through interactive volumetric tutorials. The blend between the physical and virtual world boosts this craft, making it possible for users to learn fully digitally, or blended with the physical world for a magically combined result.

Experience Principles



Origami Crafting

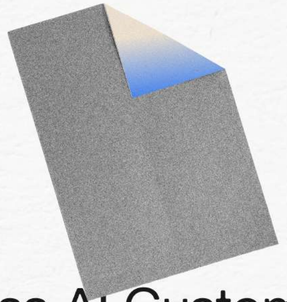
Whether just learning the basics or getting ready to explore our app library's step-by-step tutorials for every level, the experience is designed with an intuitive folding UI intended to replicate the precision of real paper folding, enhanced with natural hand gestures that bring each fold to life. This is Origami reimagined for the digital age, where every fold deepens the understanding of the ancient craft powered by MR technology.



The Real Feel

The user's room, reimagined. Our passthrough app transforms the physical space with decorative ambient elements to set the mood for a crafty session, while persistent anchors ensure Origami creations remain exactly where the user left them, seamlessly blending the digital with the real world.

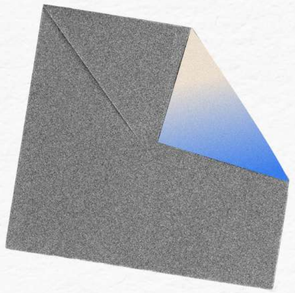
While virtually folding Origami, we want to make sure the real crafty feeling is transmitted. We aim to recreate the tangible, tactile satisfaction of folding real paper within the digital space. Every fold should have weight and resistance, mimicking the crispness and texture of actual paper, bridging the gap between physical touch and virtual creation.



Limitless AI Customization

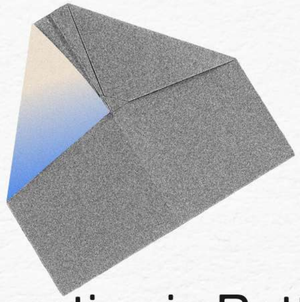
Unlocking endless creativity with AI-powered customization. Prompt away to create cool prints and patterns for the virtual paper sculptures, making new prints that reflect the user's personal style. Want to craft a shape that's not in the library? Users will be able to simply use voice commands and let the AI guide them through the process of creating any origami form imaginable. Every fold, every paper is designed by the user, and enhanced by AI.

Experience Principles



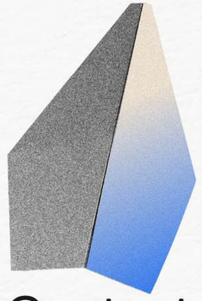
Make it Yours

Individuality matters, hence from the moment the user creates their profile, the journey becomes their own. Customizing avatars and MR workspaces, tweaking settings and immersing themselves in an experience tailored to their skill level to craft at their own pace. With every completed model, badges are unlocked showcasing progress. The rewards system motivates the community to push the creativity further, turning every fold into an opportunity to personalize their real world.



Collaborative is Better

Origami is an art, and art is meant to be shared. Bringing friends and family into the creative process through collaborative art installations, where users can create intricate models together with a common theme. Whether working side by side or across the globe, collaboration in MR opens new possibilities for social creativity. Sharing creations is possible effortlessly both on social media, or within the app's community gallery.



Continual Content Expansion

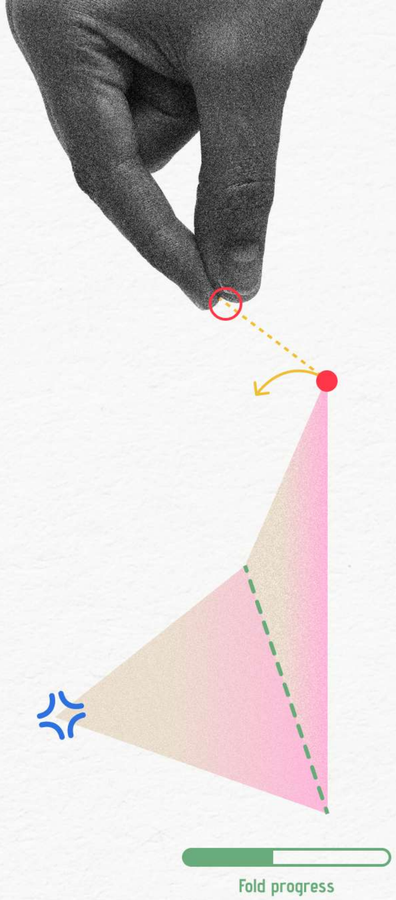
The journey doesn't end after the first fold. There's always something new to explore— seasonal releases, new models, masterclasses, and additional content. New models are added regularly, alongside exclusive masterclasses that deepen modeling skills. Whether revisiting old favorites or tackling new challenges, users will access continual content expansion keeping the app as dynamic and evolving as their imagination.

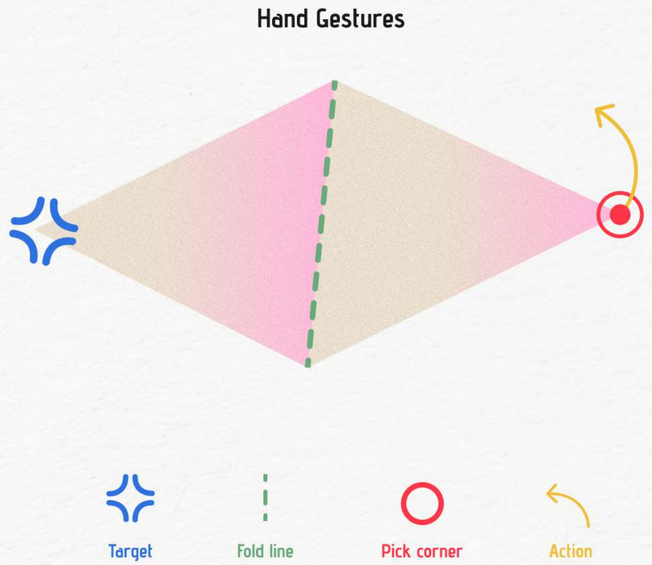
02

Technical Details

Folding UI / Language

MR technology allows users to craft Origami with interactive 3D models and natural gestures. With a clear 360° view of the model, combined with visually clear UI instruction, Origami tutorials become easily understandable.



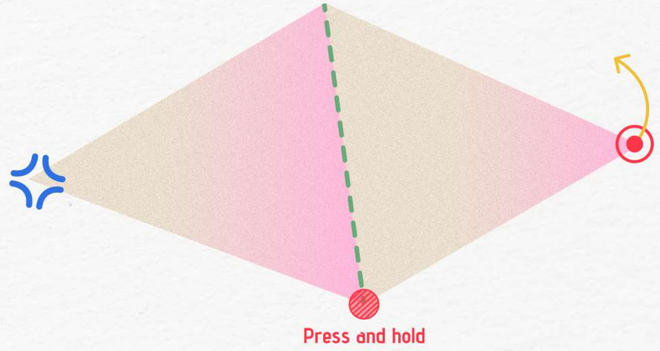


New interactions

Markers in space will guide the user to the corners, as well as instructing the movement required in the current fold. This can be either a single handed gesture or multi finger/hand gestures depending on the complexity of the fold. The UI will also help users achieve accuracy in their movements and convey progress.

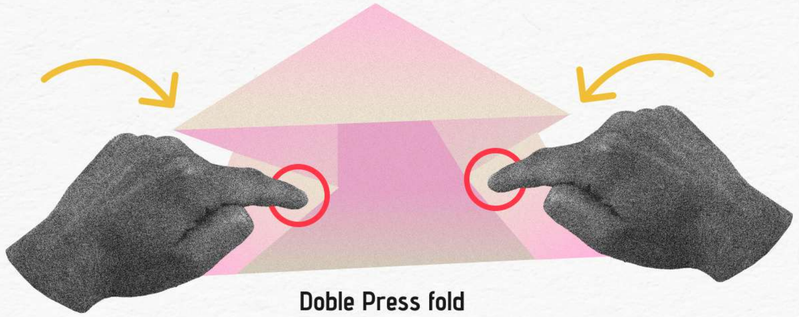
Embracing the standard

We will base ourselves on the current standard within the Origami community, combined with our knowledge on spatial design. This will result in an easy to understand UI both for people with previous experience, so they can transfer knowledge from standard Origami techniques, and for new users, so they can join the community through common language.



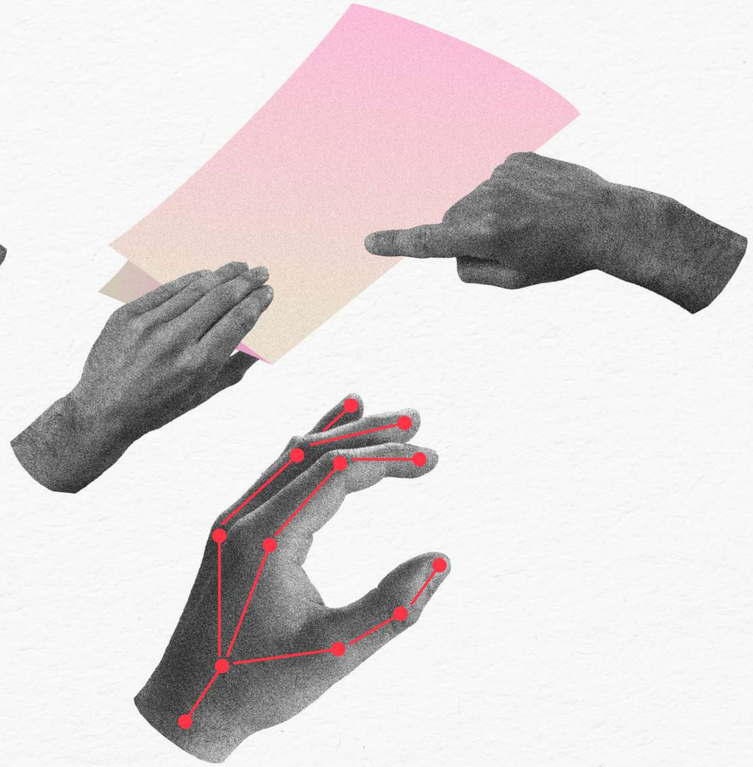
Interaction & Hand Tracking

This experience requires precise interaction to achieve realistic object manipulation. Subtle and micro movements demand a precise system for gesture detection, and for certain Origami folds even multi point and complex gesture analysis.



Doble Press fold

Gestures SDK



Vector Analysis

Hand Gestures vs Position Vectors

The platform provides a Hand Gestures SDK to detect specific gestures, even customizable ones. We will be using them for grabbing interactions and picking gestures. We will also be working on our own gesture detection algorithms using bone vectors to map subtle and complex hand and finger positions. This will allow us to map additional interactions required for this specific craft.

Multi Point Gestures

On top of gesture detection, we will also be tracking multi-hand interactions. This requires precise analysis of relative positions and alignment.

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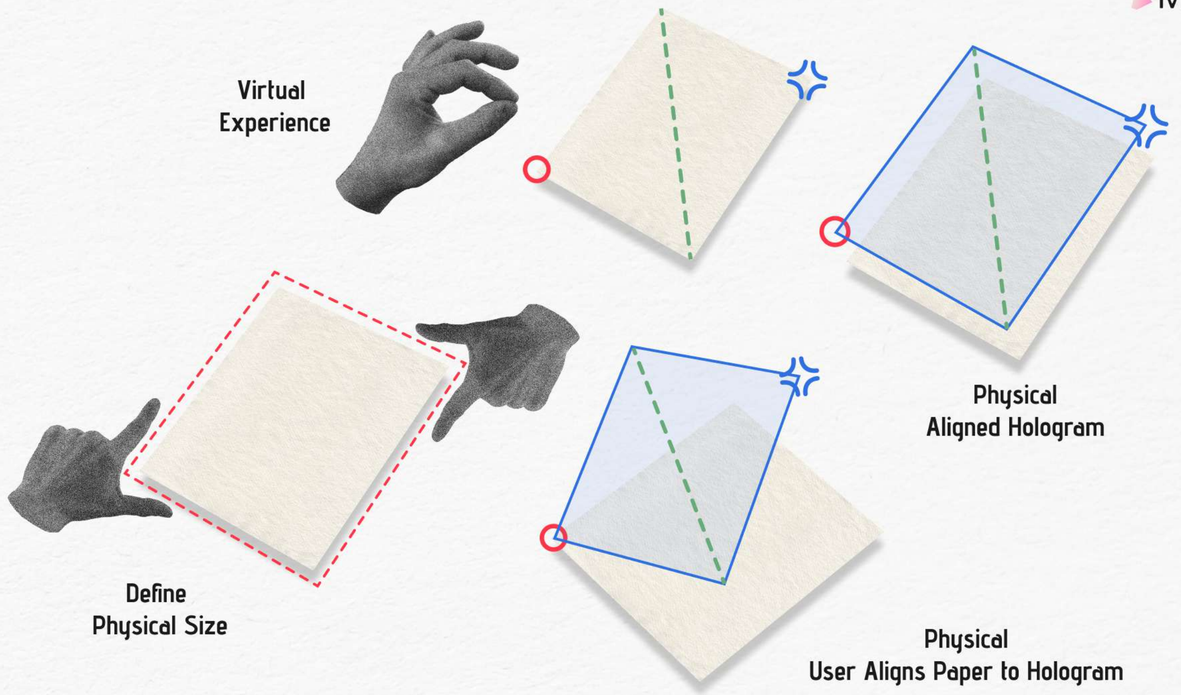
Origami Crafting



Virtual vs Physical

Once users select an Origami design, they will be able to choose between working with virtual or physical paper.

In the case of virtual paper, the 3D model will appear in the MR environment and allow users to follow the step-by-step guide interactively by recognizing hand positioning and gestures. Integrating real world objects such as a table top will add tactile feedback, even when using virtual paper.

If physical paper is selected, users will be requested to define the paper size with their hands. Then, a transparent model will overlap the paper to guide users into creating the design, showing folding instructions. Users should follow the instructions illustrated in the MR space. This setup will not detect the real paper due to headset privacy settings, hence at the end of the step users will move into the next fold by issuing a voice command.

All models in the library will be available for craft in either setting.

Voice Commands

Since the experience itself is strongly focused on handcraft, we will integrate voice commands to access secondary actions and avoid getting the user out of the folding experience.

Voice commands will be integrated through Oculus Voice SDK (based on WitAI command detection). Commands will be defined using conversational triggers, avoiding complex or technical commands, but rather focusing on user friendly wording making it feel natural and accessible to all audiences. Instead of using “Fold completed” we may use “I’m ready” to trigger the next step. We will distinguish between normal buttons and voice activated buttons through consistent UI throughout the app

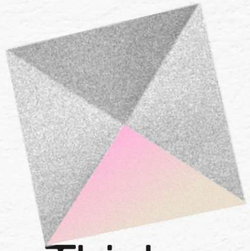
The Real Feel

Recreating the craft

While virtually folding Origami, we want to make sure the real crafty feeling is transmitted. We aim to recreate the tangible, tactile experience of folding real paper within the digital space. Every fold should have weight and resistance, mimicking the crispness and texture of actual paper to bridge the gap between the physical craft and virtual execution. To achieve a realistic approach to paper rendering we will work on 3 key features: Ambient Occlusion, Thickness and Roughness.

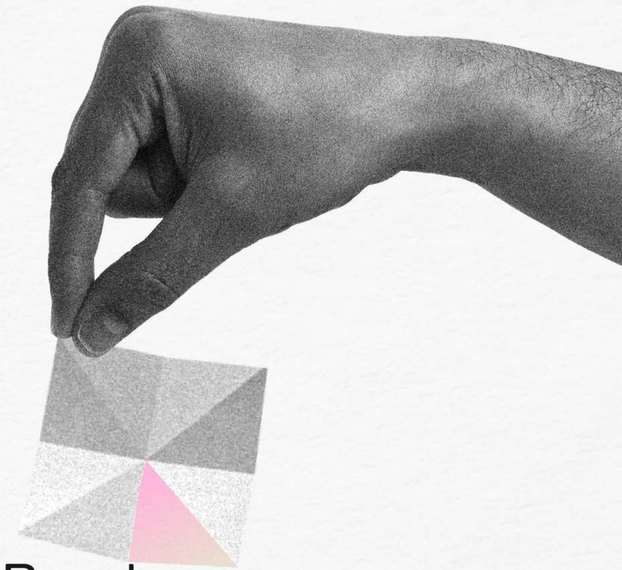
Ambient Occlusion

Origami is all about transforming a flat surface into a three-dimensional figure, hence, light and shadows are a must to convey volume and perspective. Ambient occlusion allows us to add shadows in between the creases and folds, generating realism and contrast between the sections of the structure.



Paper Thickness

With a combination of textures, highlights and actual modeled width, we will be conveying paper thickness. This will allow us to create volume, an important part of defining shapes within the Origami craft.



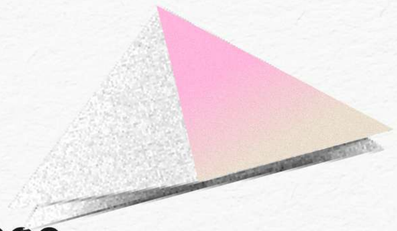
Paper Roughness

Paper texture and volume will also be complemented with roughness patterning. Users will be able to inflate, compress and twist the models, allowing them to give character to each creation.

The Real Feel

The user’s room, reimagined

Our passthrough app transforms the physical space with decorative ambient elements to set the mood for a crafty session, while persistent anchors ensure Origami creations remain exactly where the user left them, seamlessly blending the digital with the real world.



Ambiance

Using scene understanding, anchors and persistence, ambient elements will be integrated to help boost the feeling of being immersed in the iconic world of Origami Master. In a Mixed Reality setting, you can enhance the user's experience by integrating virtual elements into their real-world environment to build a more immersive and thematic ambiance.

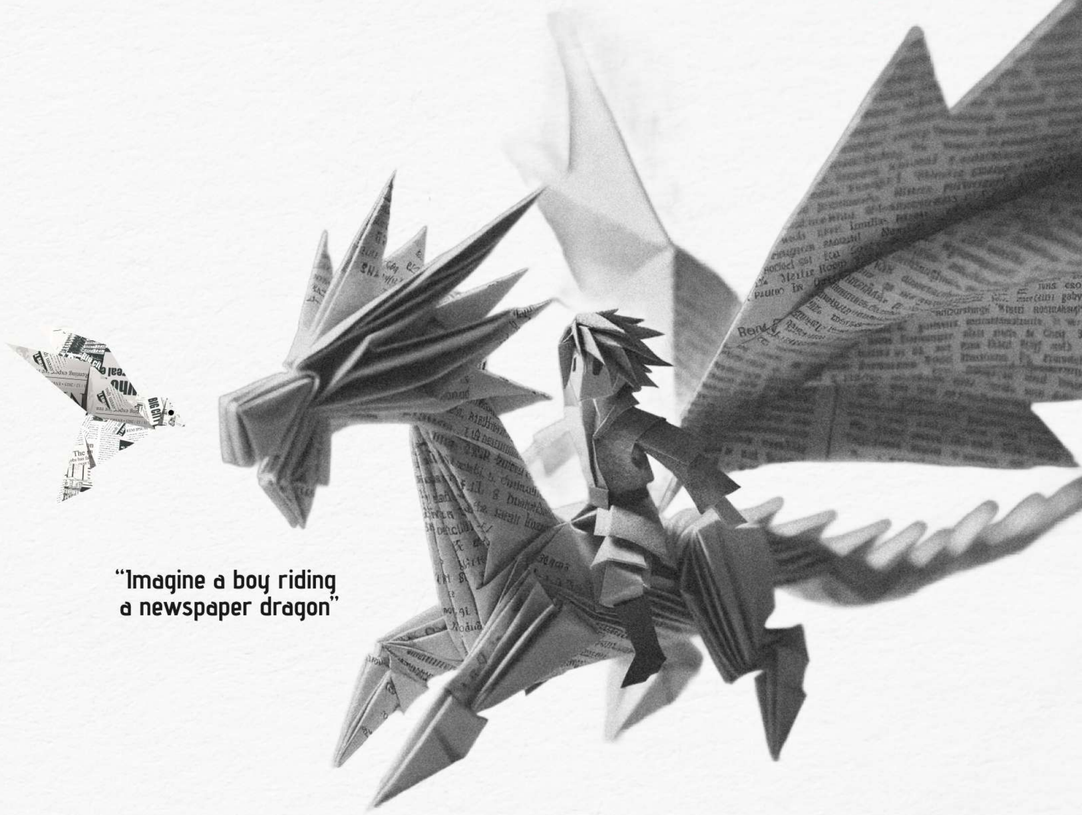
SFX

Sound effects will complement the experience when users interact with the digital paper to convey the craft aspect of the material reinforcing the physicality of the Origami.

Origami Master

Limitless Creativity with AI

Far from being a threat to creativity, AI has opened up whole new avenues for creative expression. By utilizing Generative AI in the back end, our app will allow users to create unique, one of a kind Origami creations of anything they can dream up.



Imagine and Create Original Origami Using AI and Algorithmic Generation

Origami is all about mathematics, so the possibility of working with algorithms and AI opens up the amount of original shapes we can teach. This will help develop step-by-step tutorials for endless shapes and creations. We will even be able to generate new tutorials based upon user inputs to create never before seen Origami masterpieces that resonate on a personal and community level.

Using voice commands, the user will be able to prompt the app to generate a three dimensional image of any Origami shape, design, or structure they can think of. This is not just a three dimensional image, but rather, a real Origami shape that can be created out of real or virtual paper using tutorial steps that have already been generated by our custom algorithm. This will allow users to create anything they can imagine and craft it just like any other design from the library.

Customizing your Origami

Integrating AI-driven design to enhance user creativity by generating unique prints for each 3D Origami model. Through prompting, users can generate personalized patterns, colors, and textures to apply to their virtual paper, ensuring every piece is one-of-a-kind. This feature allows for deep personalization so each user's gallery feels unique.

The customization stage will be integrated into the user journey once the piece has been completed, making use of the benefits of working with virtual paper for arts & crafts, without taking the focus on the folding component.

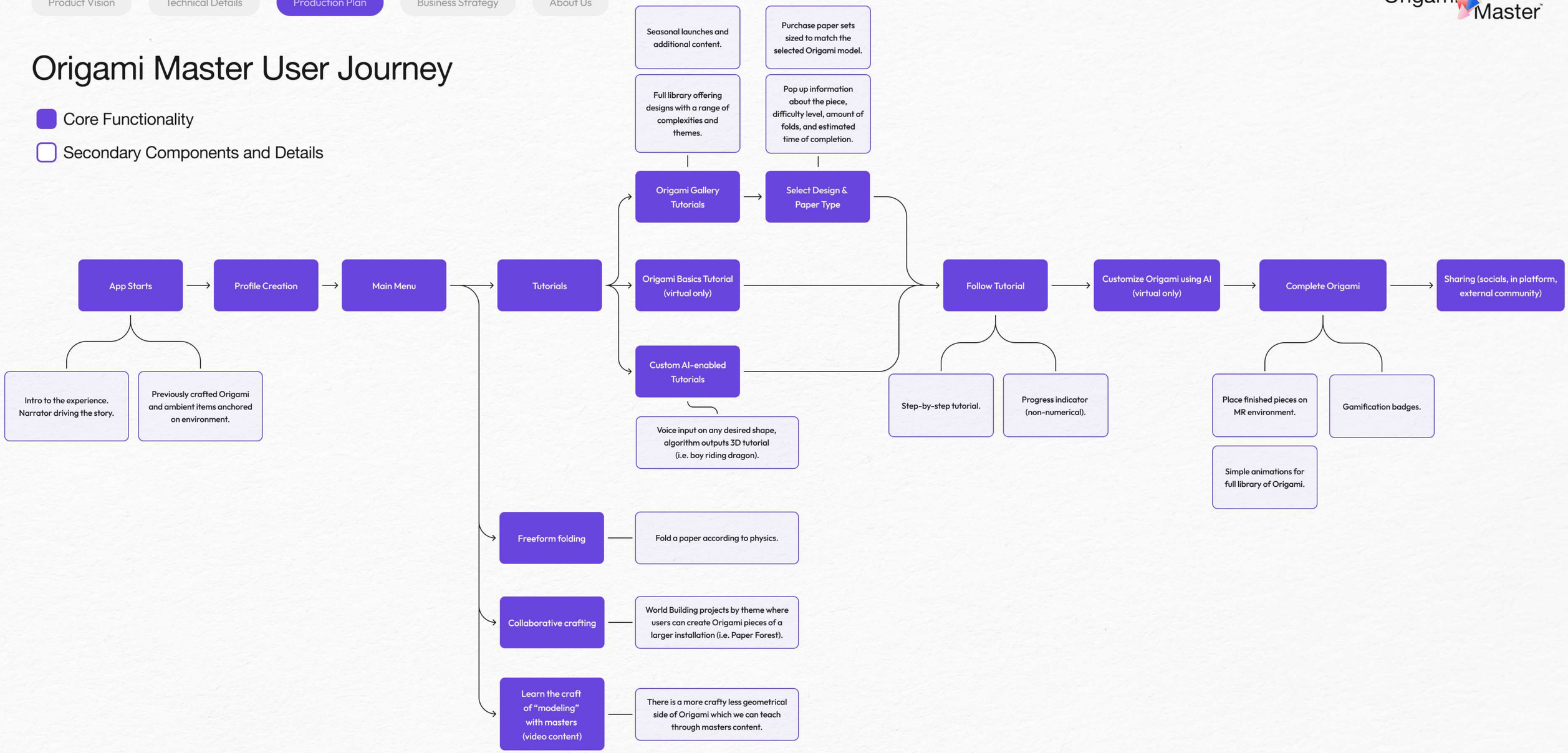
03

Production Plan

Origami Master

Origami Master User Journey

- Core Functionality
- Secondary Components and Details

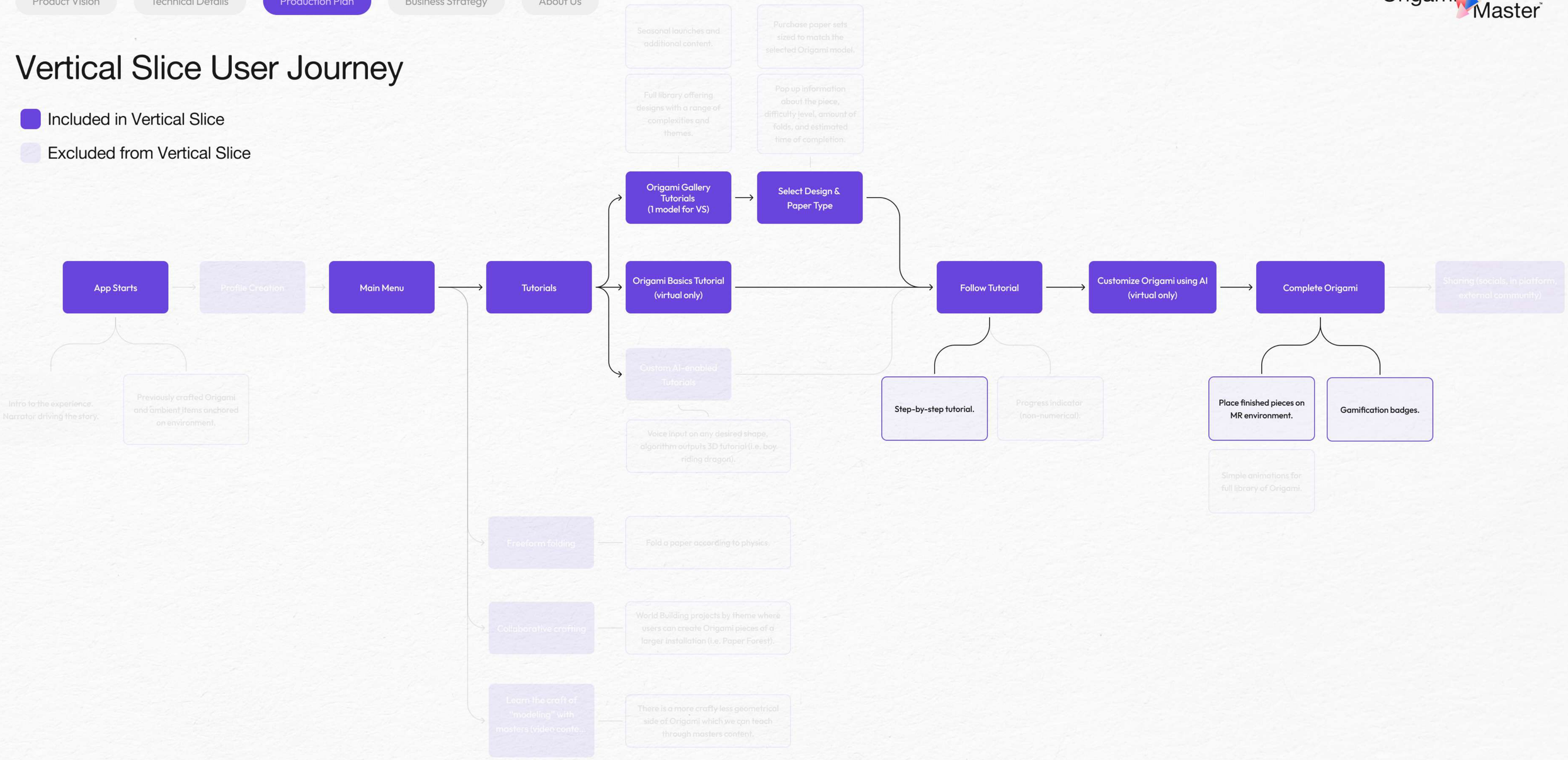


Origami Master

Vertical Slice User Journey

Included in Vertical Slice

Excluded from Vertical Slice



Vertical Slice Feature Set

Features	Short Description	Will Include
1. MR Scene Understanding	Place objects within the user's real-world environment.	Origami folding space Virtual Paper Folding UI
2. Hand Tracking	Hand tracking, gestures, and responsiveness.	Pinch gesture (SDK provided gesture) Multipoint gesture - Double press (custom-built gesture) Distance measurement
3. Voice Commands	Use of voice-controlled specific commands.	Basic interactions: Open/Close Menu Next Step (folding) Repeat Step (folding)
4. AI Virtual Paper Customization	AI-based customization of colors and textures, to prompt immediate visual responsiveness in the virtual paper model.	GenAI Backend with image generation Voice prompted (pre computed prompt + user query) Output: 1024x1024 tilable image generated based on the user prompt
5. Main Menu	Hand-tracked Main Menu to reach and interact with.	Limited options: Main Menu anchoring Main Menu display Access to sections: Library, Learning the basics (with limited functionality) Hand interaction and voice interaction
6. Learning the Basics Tutorial	For Virtual Paper, teach the importance of precision on hand tracking for folds.	Available for virtual paper One 3D model tutorial Mountain and valley folds only Voice commands

Vertical Slice Feature Set

Features	Short Description	Will Include
7. Virtual Paper Integration	Virtual representation of the Origami paper to allow users to follow the step-by-step by recognizing hand positioning and gestures.	Only one model will be available for selection within the Origami Library Respond appropriately to hand tracking and gestures Progress in shape as the user completes the indicated steps Origami will require between 10 and 20 folds Material will change depending on the progress to achieve the real feel Automatic step completion detection
8. Real Paper integration	Mechanisms for a transparent overlay to position itself over the real paper to allow users to follow the step-by-step. As this setup will not detect the real paper due to headset privacy settings, users will move into the next fold by issuing a specific voice command.	Only one model will be available for selection within the Origami Library Transparent Overlay Material show the current step to the user Respond appropriately to hand tracking and gestures Progress in shape as the user completes the indicated steps Origami will require between 10 and 20 folds Voice command to finish the step and progess, no automatic detection
9. 3D Tutorial Methodology	A combination of audio, visual cues, and animations for each step in the Origami folding process.	Folding pattern and lines Interaction points Visual instruction cues (arrows) Voice-guided instructions Folding step completion and progress
10. Gamification Badge	Gamify the learning process by providing a badge for an achievement.	One badge will be available for redemption.

Milestones Deliverables

3 Months Milestone

MPOC
The MPOC will be the first conceptual test for developing the Origami Master experience. By showcasing a snippet of the Learning the Basics Tutorial, we will demonstrate the interactive component of folding digital paper and hand gestures in a Mixed Reality environment.

A video of the experience will be delivered to exhibit our achievements for the first milestone.

6 Months Milestone

Vertical Slice
The Vertical Slice will be the first playable build of the experience which will showcase a main-level loop experience, aiming to demonstrate what the experience looks like within the user's space from the moment the app is opened until the selected Origami piece (digital or physical) is finished.

Design Document
The Design Document will serve as a comprehensive product blueprint outlining it's functional specifications, architecture and technical details.

Vertical Slice Budget

Category	Cost
Creative	$30,800
Design	$17,600
Core Development	$13,640
Hand Tracking	$17,600
Origami Folding	$31,680
Interaction	$7,920
AI Customization	$20,240
QA	$8,800
Project Management	$34,870
Subtotal	$183,150
Server Costs	$2,000
TOTAL COSTS	**$185,150**

04

Business Strategy

Business Model

Origami Master will cater to a wide variety of US-based users spanning from different age groups and levels of expertise, giving them a new way of practicing the beautiful craft of folding paper.

Based on a conducted user survey focused on users' willingness to experience Origami within a Mixed Reality setting, we foresee our product's business model to be value-driven. The insights gained from this survey highlight the importance of creating a seamless and enjoyable user experience, placing the Origami creation process and individual satisfaction at the forefront.

As we develop our pricing strategy, we will prioritize perceived value over production costs, ensuring that users feel the product's worth aligns with their expectations.

Here's some of our preliminary users' thoughts:

"As consumers we are all different but we all want the same thing and that's the option to choose personalization."

"It would be good if there were lessons based on skill level so that I could learn the craft from the bottom up."

Pricing

Based on a benchmark analysis of the available apps in the Meta Quest Store and Origami Master's value proposition, we envision Origami Master to be available through a one time payment approach in the lower range of available apps at the moment.

To boost growth and plan a long term vision for the app, we will constantly add new designs, themed by season. Seasonal packs of new Origami forms will be available in the user's library. Also, video masterclasses will be available for user to access and learn directly from Origami experts.

All these new contents will be available through in-app-purchases.

"I'd love to see interactive models with moving parts and themed collections, like animals or landmarks. Augmented reality for folding instructions could also be a fantastic addition."

Origami Master

Future Product Expansion

The North Star (made of folded paper)

As we continue to expand the world of Origami Master, we will continually add new content and tap into the community aspect of the hobbyist space, creating and connecting to enthusiasts around the country both virtually and IRL. Additionally, partnership with featured artists and even award shows will expand the community even further. This could even go so far as to include physical paper sets based on selected origami (either standard or AI original) to further connect the physical and digital worlds. Ultimately this is not a tech only experience. It is truly Mixed Reality.

Multi Entry Points

Develop a community platform for sharing, commenting, upselling Origami Master merch, cross platform access to your own and others work, model making AI, partnerships, awards and competitions, etc.

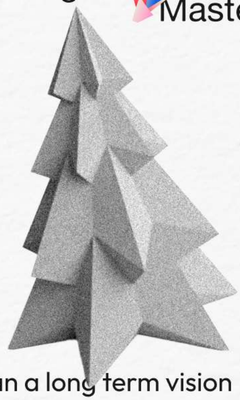
Craft Stores

The possibility of creating a click and go purchase of cool paper designs in collaboration with a paper company. We could even create a bundle where we sell a headset and papers, opening up to new users and introducing them into the technology.

Masterclasses

As the product grows and additional features become available, such as video Masterclasses driven by everyone's favorites Origami Gurus, users will have the opportunity to access new content through in-app-purchases.

Seasonal Launches



To boost growth and plan a long term vision for the app, we will make sure we constantly add new designs, themed by season. Also, we will provide new masterclasses of everyone’s favorite Origami Gurus.

IRL Events

As the community grows, the blend of physical and digital can even lean into fully physical spaces, where users who met digitally in Origami Master can attend events to collaborate and create a bigger project guided by origami teachers.

05

About Us

Spatial Arts™
by The Electric Factory

Spatial Arts was founded in 2024 with a simple but powerful vision, to create spatial design products for the exponential era. From inception, we find ourselves at an inflection point in history, a time where true Mixed Reality is coming to the fore, where the physical world is not replaced or escaped through the digital, but enhanced by it. At Spatial Arts, we actively participate in and work to determine this new reality.

This venture is an independent spin off of The Electric Factory, a company with a 20 year history of combining strategic thinking, creative design and technology to craft impactful experiences for clients. Spatial Arts takes the creative, technical, and strategic foundations of TEF and applies it to product creation and IP strategy, designing and developing applications that will help define the new spatial world that is forming around us.

Founders

Danny Paul

Danny has 25+ years experience leading creative technology ventures and has founded multiple successful companies, including Bandwith and Theta.
In addition to his own ventures, he is the Chief Creative Officer at The Electric Factory where he oversees all creative work across the company which ranges from immersive technology applications, AI powered interactive, world building platforms, experiential installations, spatial design, and animation.
He is a pretty good gamer and hearts Origami hearts.

Avedis Boudakian

Ave has 20+ years of experience in creative and technology industries, with a strong focus on XR and immersive technologies. Throughout his career, he has founded various companies, including The Electric Factory (TEF), a multi-award-winning company renowned for its groundbreaking solutions in digital production and XR, serving global clients like META, Snapchat, Netflix, Atlassian, and Walmart.
Ave has a deep love for Origami, which inspires his approach to innovation and creativity within his businesses. His companies have garnered over 150 awards for technological innovation, including prestigious recognitions at Cannes Lions, Fast Company, New York Festival, SXSW, and D&AD.

Future Team

Technology Lead

Ana Pereyra

With over 15 years of experience in the XR industry, Ana excels in her insatiable curiosity, adaptability, and passion for problem-solving. Always eager to tackle challenges, she deftly leverages her creative and analytical skills to devise innovative solutions. Her love for variety keeps her work exciting, ensuring she is constantly open to exploring new opportunities and approaches.

With a keen appreciation for art and creativity, Ana adds a unique dimension to her problem-solving process, infusing her work with fresh perspectives and imaginative solutions.

Ana has participated in the creative ideation and development of several mobile games for iOS and Android, as well as VR and AR interactive experiences for a myriad of platforms / frameworks.

Passionate about rock climbing and Origami, Ana loves combining her two hobbies by designing interactive climbing walls inspired by the intricate folds and patterns of Origami.

Business Owner

Responsible for the product vision and general overview of the app.

AI Lead

Responsible for research, AI system definition and development.

Creative Technologist

Responsible for combining creative and technical knowledge to design and implement desired solutions within the app vision.

Spatial Designer

Responsible for user experience definition and UI elements design, conceptualizing the scene and elements.

3D Artist

Responsible for technical design and 3D modeling all assets.

Unity Developer

Responsible for the app's development and integration.

Technical Artist

Responsible for code based animations, code based shaders and textures.

Project Manager

Responsible for leading the team and ensuring delivery within budget, scope and quality.

The Work That Led Us Here

Focus

A spatial brainstorming tool.

Learn more

Focus allows brainstorming sessions in inspiring immersive spaces. Designed as a VR/MR productivity and ideation space, this experience allows users to engage in creative processes in a new way. The ability to arrange elements such as 3D boards, sticky notes or reminders, helps users create a mental map of their project, improving organization and recall.

Integrating GenAI into the VR/MR environment provides users with an intuitive way to interact with AI, enhancing creativity and idea generation through natural gestures spatially. Web panels allow users to access external data and information to enhance the connection within and out of the device itself, making this a seamless app for productivity.

An Impossible Guest

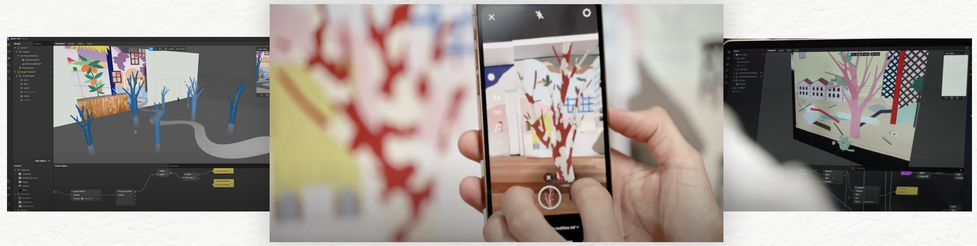
If you could have dinner with anyone, who would it be?

Learn more

One of, if not the most common party question is, “If you could have dinner with anyone, who would it be?” It’s one of those hypothetical questions that people ask to learn a little bit about you and your personality. But what if it were actually possible? What if you really could have dinner with anyone from history?

An Impossible Guest is an educational experience that allows users to interact with historical figures using Meta Quest passthrough features. Through AI, users can have a one-to-one fluid conversation with their selected historical character. For the AppLab version, we created a demo where users can have daily conversations for about 10 minutes with Leonardo da Vinci (only character available for now), selected specially for this MVP version of the product.

The Work That Led Us Here



Talita Hoffmann

Augmented Reality Mural Art Installation.

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Commissioned by Meta Open Arts, this project highlights the digital era to be one of empowerment for artists around the world. Using augmented reality, we were able to allow users to play an active role in the viewing experience. Inspired by the work of Brazilian artist Talita Hoffmann's, the AR experience was designed so the 20-foot mural in Meta's São Paulo office would deploy nine different areas of animations to bring the mural to life.

Working side-by-side with the artist, the AR filter was developed highlighting the visual choices she had made and became an organic extension of the artwork itself. From transitioning skylines to trees that would lift off the wall, we managed to layer dozens of unique design elements into a mobile-first package weighing just 3.7MB.

Beta R&D Augments

Digital objects alongside the physical ones in our homes.

Learn more

By blending the virtual with the physical, this project enabled users to add persistent 3D interactive elements in their real environment. Each of these explores a different feature - physics, controller interactivity and mesh reaction, 360° scenarios, and random gaming layouts.

Using surface tracking technology, users can place these elements in their real environment, adding an extra layer of fun to their homes. The dimensions and positioning can be easily modified with hand tracking, plus customizable features on coloring and textures.

The world of virtual objects is here to stay.

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