

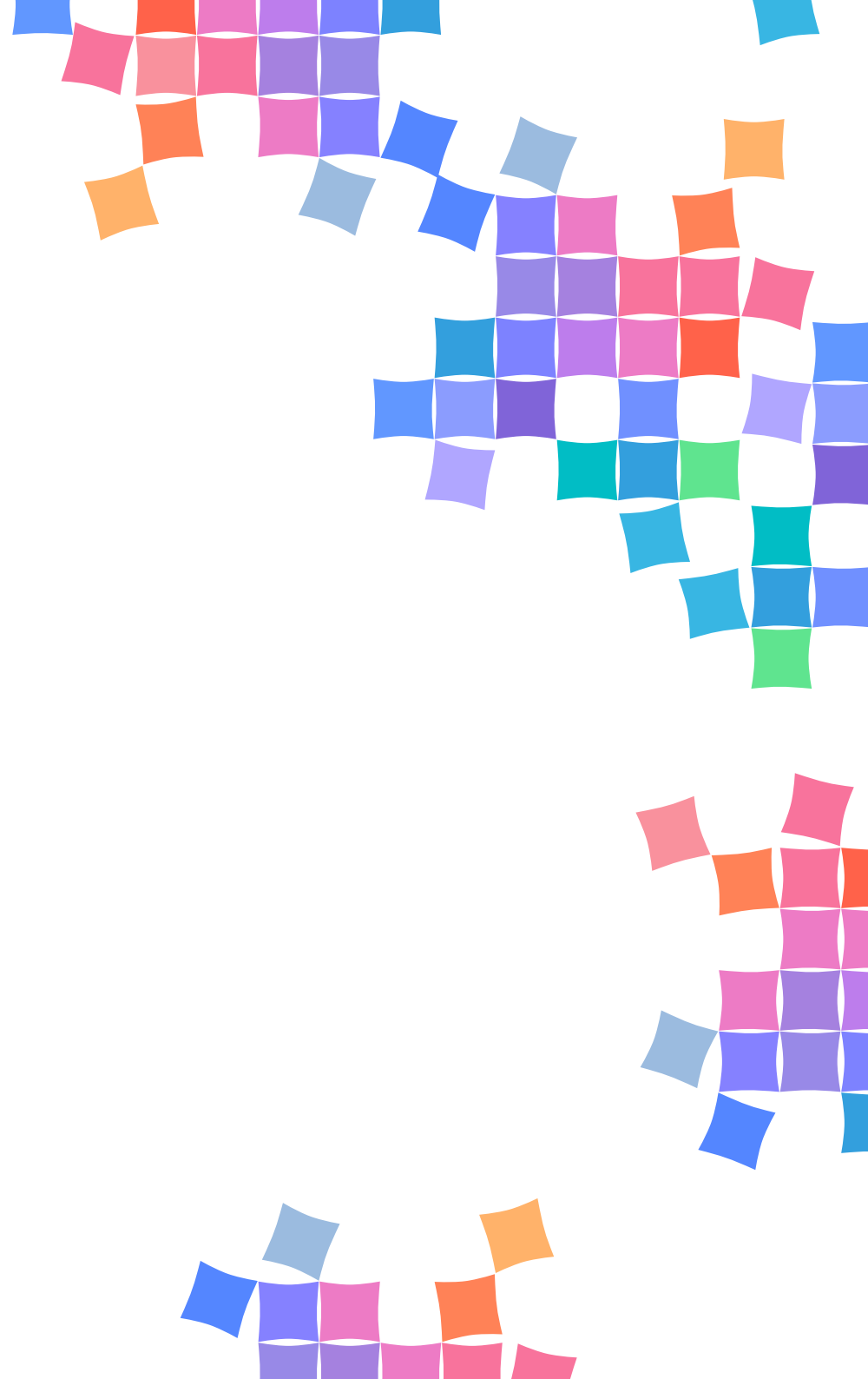
Toward a Culture of Flourishing

Digital Architecture Lab

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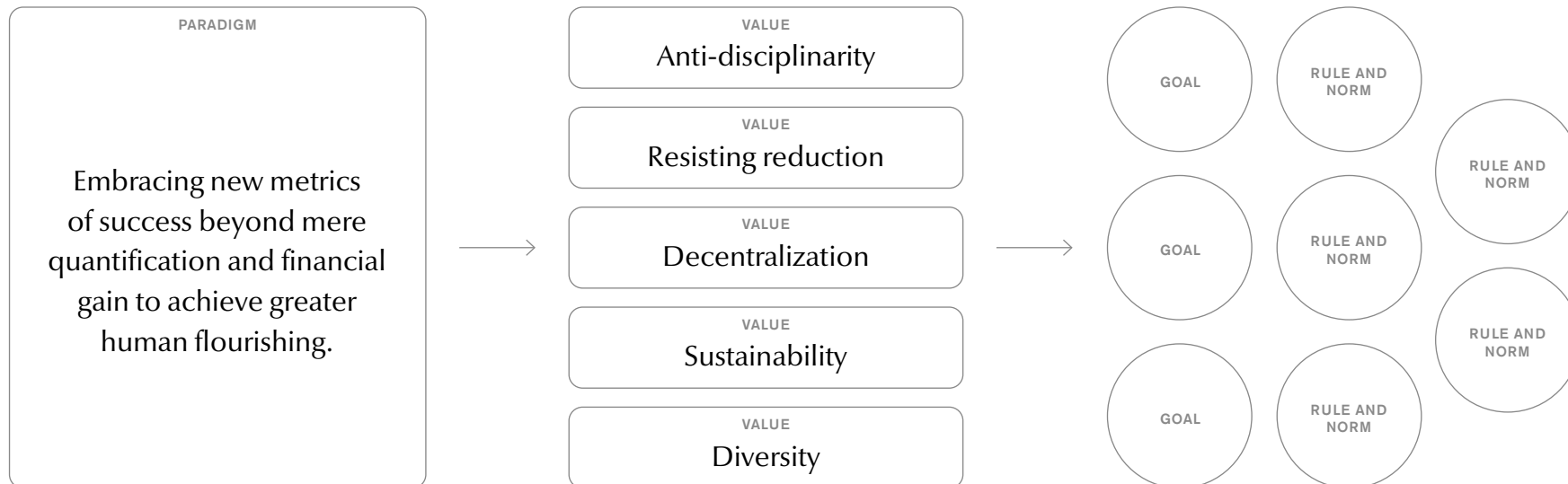
Introduction

Two years ago, we established the Digital Architecture Lab to explore the potential of the design principle we termed Henkaku: a combination of the Chinese character 變Hen, meaning “to strike the vessel that contains a vow to God,” and 革Kaku, meaning “the skin of a beast that has been opened” (or, more broadly, to change something’s form). Henkaku means to change the current situation, and it implies a radical change: to make something new.

We launched the Digital Architecture Lab (DAL) to research and implement Henkaku in practice. The goal is a paradigm shift away from the monoculture of economy, of data, and of philosophy, that defines success in terms of wealth and

power and seeks to preserve the status quo. DAL aims to propagate a new paradigm of human flourishing based on health, sustainability, happiness, and agency.

When we first began preparing to launch what became the Digital Architecture Lab, we worked with design firm Pentagram to help us think through and codify Henkaku as a design principle. That research was published in the report “Towards Henkaku,” and offers an excellent primer on the philosophy and expression of Henkaku. In brief, Henkaku emphasizes Eastern rather than Western philosophy; espouses data humanism and a focus on craft and participation; and features the following core tenets: *Anti-disciplinarity, Resisting reduction, Decentralization, Sustainability, Diversity*



A diagrammatic explanation of Henkaku's theory of change



The world grows increasingly more complex. Year by year, we see new instances of political unrest and humanitarian crisis; new and growing threats from climate change; overlapping epidemics of diseases and chronic health conditions; an unprecedented mental health crisis among the young, paired with an aging population and lowering birth rates; an unreliable global economy; and increasing distrust in institutions and leadership, as well as in the power of science, technology, or learning to help solve problems. These problems are all interrelated, exacerbating one another unintentionally.

No one system or chain of events brought us here, and there is no single panacea. Rather, our Henkaku-informed approach seeks to embrace complexity and, by embodying a plurality of approaches and ideas, change the status quo. Through research projects and academic collaborations via MESH Studio, events and workshops, placemaking and culture-building, and exploring ideas in writing and conferences, we've established the working principles of radical change in several different areas. (Explore our [blog](#) to learn more about these efforts.)

“Henkaku functions like these paths and gates: thoughtful architecture to gently guide a new zeitgeist in pursuit of a new era of human flourishing.”

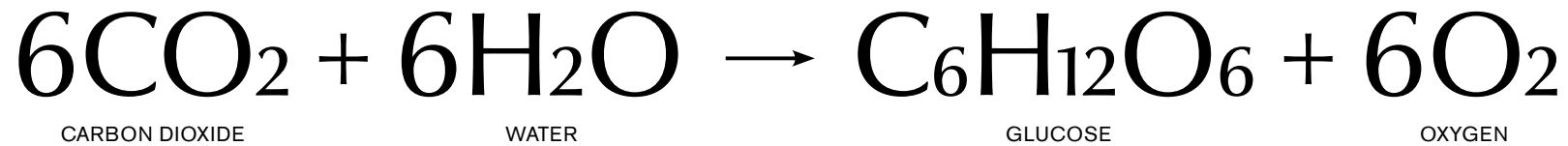
We've come to understand Henkaku not only as a design principle, which describes a key concept and how it applies to relevant systems, but as a sensibility: a holistic approach to thinking, designing, creating, and propagating change management at the societal level. Through the Digital Architecture Lab we have begun to build a new sensibility for the digital age, one that takes advantage of the unique affordances of technology and the digitized world while accepting our history and nature as fundamentally tied to physical space, tradition, and consistency.

In this paper, we seek to share some key insights from our first phase and set out next steps both for Henkaku and its expression in digital architecture.

Complexity, power, and change

The way Joi Ito sees it, we ended up here because of oxygen, and also accounting. The Chief Architect of the Digital Architecture Lab (DAL) and President of Chiba Institute of Technology, Ito has studied complex systems and, particularly, introducing change to those systems.

Around 2-3 billion years ago a new form of bacteria evolved the ability to produce oxygen through photosynthesis. These cyanobacteria quickly killed off most of the anaerobic bacteria that had to that point been the dominant life form on the planet. This Great Oxidation Event was a mass extinction event—but it also led to the



Cambrian Explosion of 538 million years ago, when there began an unprecedented emergence of complex life.

As humans evolved and societies began to grow, Ito points to the development of the practice of accounting (starting in ancient Mesopotamia) as another inflection point in the history of complexity. The ability to keep track of the exchange of commodities, to hold individuals and groups accountable for their promises, and to verify information about trade between multiple parties: this allowed settlements to scale to cities of 10,000 people and more. Economies, legislation, and democracy followed.

Naturally, human societies and cultures have only grown more complex since then, and never more so than in the last 50 years. Ito likens the Cambrian Explosion to our current, similarly disruptive and complex, moment in the evolution of humanity. In what he describes as a Great

Digitization Event, we are currently in a period wherein the emergence of digital technology has created a sudden and tremendous diversity of complex systems, while at the same time rapidly killing off others or rendering them obsolete.

The Great Digitization Event has had the further effect of dramatically diminishing the costs of communication and collaboration between and across systems, while at the same rate increasing the complexity of those systems—from governance and diplomacy to banking, international markets and shipping, and beyond. As a result we live within a vast ecosystem of interconnected and interdependent systems. These are a source of unprecedented wealth and power, concentrated in the hands of a relatively small handful of individuals and groups.



TYPES OF SOCIETIES	Centralized City-state	Markets and Democracy	Stable and Flourishing Decentralized Network
INTERFACE	Priests	Accountants and Lawyers	LLM Agents
INTERPRETATION	Preligion	Law, Finance	Probabilistic Programs
RECORD KEEPING	Ledger	Double-entry Bookkeeping	Blockchain and Smart Contracts
BASE MATERIALS	Clay Tablet	Paper & Ink	Digital

Changing a system is never easy—and in the context of today’s explosion of complex systems owned and operated by those who are incentivized to preserve their position of wealth and power, changing any one system in a meaningful way is a daunting task indeed. But influencing a system’s sensibility—the values and approaches of the people who work within it—is more achievable and perhaps even more important. Change may come more slowly, but it’s more likely to be thoughtful and permanent. The principles of Henkaku are uniquely suited to influence the sensibility of the systems we wish to see changed.

So what is the practical expression of a sensibility whose goal is a cultural paradigm shift toward human flourishing? Part of our work over the last two years has been exploring what it means not only to embody but to serve a cause through action. We began with a good sense of what values and outcomes we wished to pursue; now we are working toward applying our approach as a cohesive sensibility.



Why Architecture?

If Henkaku is the sensibility guiding our work, digital architecture is the practice around which DAL's work is built.

Architecture, traditionally focused on buildings and urban planning, has evolved to encompass not only computer systems but also softer societal and cultural systems. This shift requires an interdisciplinary approach that includes engineering, social science, design, economics, and aesthetics to develop a framework for diverse participants to collaborate on the construction of buildings, enterprises, or digital systems.

In today's context, the continual advancement and integration of new technologies, such as blockchain and AI, creates a pressing need for architecture to adopt a new sensibility. This sensibility must be informed by the changing environment and technological shifts of the Great Digitization Event to fully embody the potential of these new technologies while mitigating the risks and pitfalls that can emerge along the way.

At the Digital Architecture Lab, we are developing this new digital sensibility to shape the emerging architectural paradigm. We are a community of designers, engineers, and scientists working together to transcend traditional silos and bring technology closer to culture and society. Through a dynamic relationship between the arts and

sciences, we advance designers and engineers beyond visual design to include complex organizations and systems. By blending practical application with theoretical understanding—Praxis et Theoria—we guide and inspire this new community of innovators to create designs and architecture that are grounded in the new sensibility.

Embracing complexity through agency

In March 2024 we hosted a weeklong workshop on Henkaku and Digital Architecture, gathering a multi-disciplinary group of experts in disparate fields—design, behavioral science, computer science and AI, urban planning, architecture, art and storytelling, community organizing, and more. We shared our thinking on Henkaku and DAL's work to date.

The workshop participants read the "Toward Henkaku" report beforehand, and it offered a jumping-off point for deeper discussions about Henkaku as a sensibility and digital architecture as a practice. We wanted to hear from them: what does digital architecture mean to them? How do they envision Henkaku making an impact in the world as we know it? What is the future they want to see, and how do they imagine our working being a part of that future?

We ran one exercise called Narratives: Humans of 2124. We asked the participants to write a story—one day in the life of a person living in the world one century from today.



Strong themes emerged from these stories that speak to the frustrations of our current Great Digitization Event and the potential for a Henkaku-driven future in which personal agency is paramount, human connection and experience are the goal of life and work, and we coexist with advanced technology.

“But just as the Sumerians 7000 years ago probably couldn't have imagined modern democracy or Twitter, we shouldn't be able to imagine what's going to happen once we have programmable society that can scale at a complexity that we can't imagine now.” (JOI ITO)

The complexity of today's world is daunting, partly because of the sheer magnitude of our interwoven (or tangled, if you like) global context—but also because individuals have so little control over any part of it.

What if the systems that govern our lives were more understandable? What if we had agency to select which systems we participate in, and how? What if we had the choice of different ways to use energy, learn and work, be with people, and express our voices?

Agency, choice, and freedom are ideas that came up over and over in our Humans of 2124 stories and in all of our discussions about digital architecture. Given the advanced technology and global connection present in nearly all visions of the future, less complexity doesn't seem to be what anyone is after; rather, our interdisciplinary experts imagine individuals being imbued with the knowledge and tools to navigate their world with a sense of purpose. One participant summed it up succinctly in a story that began, simply, “We wake up and actually do what we want.”

What would it take to give people everywhere the freedom to live the lives they choose? A radical rethinking of capitalism and the role of money, certainly. But drill down a little deeper and something else emerges: an incredibly complex society of micro-communities, small businesses, and large interconnected organizations, allowing individuals time and liberty to explore curiosities and passions.



From Henkaku to Digital Architecture

In many ways we are working toward a radically different future; the vision for 2124 may seem far-fetched and idealized. But certain facets of that future are already well on their way to becoming our current reality.

Through our own work over the last two years, we've learned that many institutions—across industry, academia, and government—are frustrated by the status quo and are looking for new ways to express their identity, share their stories, and embrace complexity in their own communities.

As a group of “architects” working across sectors unbounded by traditional silos, DAL has taken actionable steps to lead the way forward to a broader movement, exploring theoretical foundations and practical applications.

Our current practices include several key areas:

Experience Architecture: Implementing and nurturing design philosophy through shared experiences.

One of the themes that emerged throughout the workshop, and which has been reflected in DAL's writing about our work over the last two years, is the role a space plays in embodying, influencing, and cultivating whatever they are used for. This concept of space and its significance is deeply rooted in Eastern philosophy.

This philosophy resonates with the broader Asian perception of “space” (間), which highlights the vitality that emptiness brings to humanity. Rather than mixing things artificially, Asian aesthetics allows entities to exist in their authentic forms with mutual respect and acknowledgment, creating a space where differences coexist and harmonize, crafting a mosaic enriched by its diversity.

“...we have to think about designing different prisms to allow for inclusiveness, but also diversity: diversity of different constituents, coming from and into various cultures, interacting, and remixing.” (MICHELLE HUANG)

Building upon these Eastern philosophical foundations, DAL seeks to explore experience architecture and the role of space as having the capacity for alchemy that enables individual expression and collaboration. We imagine that walking through a certain environment is similar to having a conversation with the people who designed it. Spaces, in essence, are intentions crystallized into form: form that people can walk through, live in, and sometimes even change with.

DAL's work goes on to explore the tension between physical and digital spaces. Each offers a unique set of benefits to their inhabitants—and, as we all experienced



during the pandemic, each has its drawbacks as well. Ultimately we arrive at the same problem:

- The problem with a digital space is that not everyone can access it
- The problem with a physical space is that not everyone can access it

We're interested in exploring the ways that digital spaces can enhance physical ones, and vice versa. Is it possible to leverage the benefits of both to create communities that thrive across distances and cultures? Can physical spaces – an office, a bar, a party venue, a park – reflect the values of a digital community? Can digital spaces – a web forum, a DAO, a VR meeting place – offer the sensory experience that a physical gathering offers?

By examining these questions through the lens of digital architecture and a holistic understanding of space and technology, we aim to uncover innovative solutions that bridge the gap between the digital and the physical, fostering a more inclusive and harmonious environment for all.

Tools, technologies, platforms: How do we inject more humanity into technology?

A prime example of our work in this area is our project in collaboration with the MIT Probabilistic Computing team. Probabilistic Computing is an emerging discipline

integrating probabilistic programming and generative AI into the building blocks of software and hardware, and using computer science concepts to scale up computations involving uncertain knowledge.

Within the context of Henkaku and DAL's mission, we anticipate probabilistic programming to play an important role in creating more decentralized and trustworthy AI. The core concept of probabilistic programming is its ability to integrate neuro-symbolic and probabilistic computations and scale them in unison. This approach is pivotal for mirroring human thought and learning processes, drawing us closer to a future where AI systems are not only intuitive but also logical, adept at assimilating vast datasets and explaining their decision-making processes.

However, our work in this field goes beyond the technological aspects, as we recognize the need for a decentralized architecture that fosters cooperation and diversity in the AI ecosystem.

While evolution has always been a dance of cooperation and competition, the current AI technological race is marked by sheer competitiveness, lacking the balance provided by cooperative elements. This imbalance could foster a toxic environment in the AI field. To address this issue, it is necessary to envisage a world where diverse forms of (artificial) intelligence not only coexist but also engage with one another. This perspective challenges the current focus on Large Language Models (LLMs) driven



by neural networks, and proposes a more pluralistic and interconnected AI ecosystem.

This underscores the importance of designing AI systems capable of cooperation and suggests that the symbolic layer of AI can become crucial in translating philosophical concepts into practical applications. It leads us to important questions such as: How do we train AI systems to embrace diversity, seek novelty, and pursue happiness not through relentless growth but through harmony?

As we explore these ideas, it's worth reiterating that the future of AI should not be just about technological advancements but also about their meaningful integration into society. DAL remains committed to pioneering in the field of probabilistic programming, recognizing its potential to create more reliable, transparent, and beneficial AI systems. By exploring the interplay between technology and human values, we will continue shedding light on a future where AI not only enhances our capabilities but also aligns with our collective pursuit of a more harmonious and prosperous world.

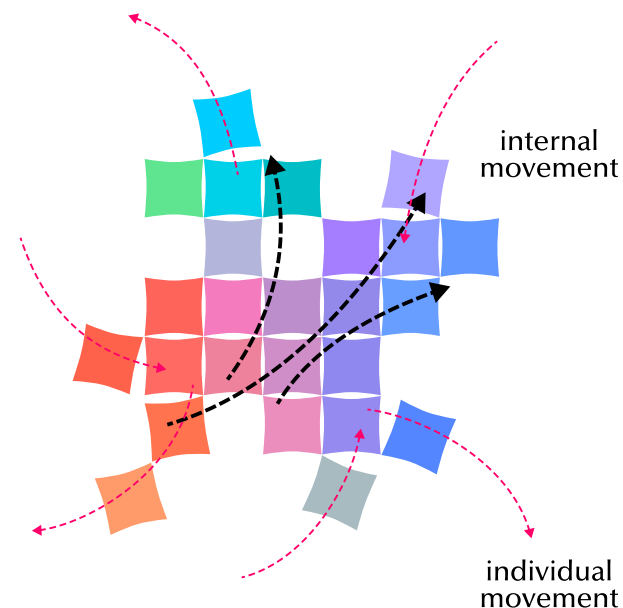
Brand Philosophy Design

Design is where one of our core values, “resistance to reduction,” is put into practice most effectively. It is a critical tool for us to navigate and represent the very complexities we wish to embrace.

Embrace complexity while maintaining clarity:

In visual design, this means representing diversity, dynamism, and the richness of human experience without losing sight of the need for abstraction to ensure clarity. However, this abstraction should not gloss over the nuances and textures of the subject matter.

There's an interesting interplay in design between simplicity and complexity, particularly in Japanese culture. While there's a strong lean towards minimalism, influenced by Zen philosophy's spiritual essentialism, there's also an undercurrent of maximalism. This is characterized by bold colors, exuberance, and a certain degree of chaos. *Henkaku*, at its core, is about exploring and expressing this duality.



Soft pixels are central to DAL branding strategies and best represent our attempt to embrace the tension between complexity and clarity. At the center of the identity is a colorful mark meant to represent the seemingly contradictory ethos at the heart of the Lab's mission: decentralization and collective action. Constructed of 25 parallelograms, or *soft pixels* as dubbed by the Lab, the icon evokes movement and activity—seemingly random, but in fact structured and organized to achieve impact. (You can read more about the soft pixels [here](#).)



Embracing organic forms, acknowledging the interplay of form and movement, the importance of materiality, and the value of craftsmanship.

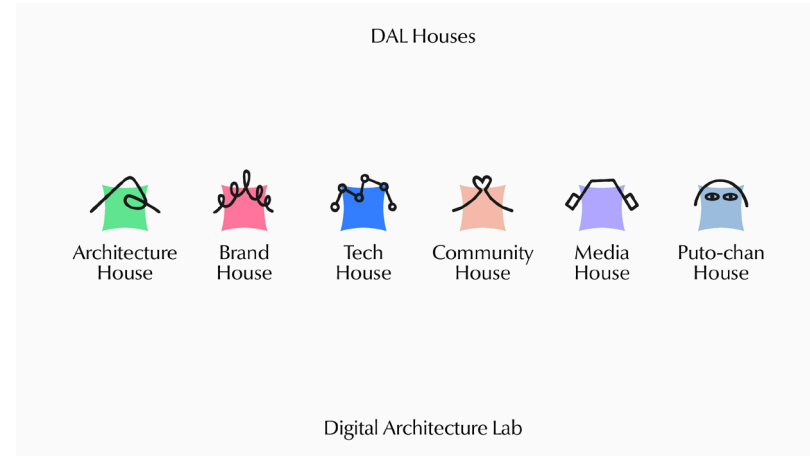
In our digital age, we often overlook the human element in data. DAL brings this to the forefront, highlighting that data isn't just an abstract concept but is shaped by human hands and minds. The hand—along with the biases—of its creator is always present.

Education and access: Translating research into engaging and insightful content for the public.

Content and storytelling are among our primary methods for bringing ideas to life. Our goal is to contribute unique perspectives and insights to the ongoing discussions in various fields. We focus on identifying stories that can add value to the digital conversational sphere, particularly those that are not often covered elsewhere.

Our multidisciplinary team ensures that rigorous research underpins every story we produce. We have conducted in-depth investigations and published articles across a wide range of topics, from cutting-edge technologies like web3 and AI to neurodiversity and cultivating team culture.

As we move forward, content and research will play an even more crucial role in our transformation into an



At DAL, teams are named *Houses* to enhance human connection, reflecting the architectural theme in our name. Each House is represented by unique hand-drawn roof designs created by our team - promoting collaboration in our branding.



For our inaugural team retreat, we designed a background pattern using hand-drawn soft pixel graphics, creating a friendly, warm vibe reflecting our ethos of valuing the human touch and sentiment in our activities.



experimental research lab. We are going to nurture and develop ideas from the vast pool of researchers and thought leaders within our network, which spans across academic, private, and public sectors. By tapping into this wealth of expertise, we hope to foster cross-pollination of ideas and establish thought leadership in multiple fields.

While we plan to continue broadening the topics we cover, we also recognize the importance of experimenting with diverse forms of media beyond traditional text-based articles. This may include exploring visual storytelling, interactive experiences, and other innovative formats that can effectively communicate complex ideas and engage audiences on a deeper level.

Conclusion

“But I think the key is, it's as big as shift as going from clay to paper to digital. And I think we need to sort of realize that we're doing a big thing.” (JOI ITO)

In our vision of a Henkaku-driven future, digital architecture serves as scaffolding for emergent cultures to form. Our work will continue to explore the digital space, probabilistic programming, and various forms of multimedia content. We aim to foster collaboration not only within communities but also between individuals and

AI systems, envisioning a future where diverse forms of intelligence coexist and interact harmoniously.

At the same time, we recognize that the digital realm, despite its vast potential, cannot fully encapsulate the profound depth of human values and experiences. This is where our focus on experience architecture comes into play, as we strive to create spaces and environments that enable authentic human connection and expression. By embracing the principles of Henkaku, firmly grounded in Eastern philosophy and aesthetics, we will create a harmonious synergy between these two realms.

We believe the 2024 Digital Architecture Lab workshop will serve as a starting point and a catalyst for positive change and lays the groundwork for a more inclusive and sustainable society. Together we explored the intersection of technology, design, and human values. Subsequent collaboration will continue to inspire and enable the creation of a world where human flourishing is at the forefront of our collective endeavors.

Today, we are announcing the launch of our MESH Studio. This incubation lab is meant to host and provide support to a set of experiments and project collaborations between researchers, both citizen and professional, on topics of emerging technologies. The topics we are primarily exploring are the focus areas listed in our call to research above.



The intention for this space is to help make frontier research more accessible and sensible to the public eye. In other words, it exists to bridge the abstractness of research into something that is relatable to the everyday passerby. We aim to answer questions like: Who are we building this tech for? Who at the end of the day benefits from innovation? What does the long tail end of “progress” look like? What is an ideal world, and how should we consciously create it together? The answer to these questions should not be limited to the technologists, scientists, and innovators who have enough technical wherewithal to build the future, but also those who are impacted by it.

In helping translate technical research into interactive installations, visual storytelling, and in-person experiences, we hope this initiative can also serve as fertilizer for ideas to grow. By surfacing up interaction points for research to look more like play, we will allow these experiments to exist in living laboratories for the public who can engage with them and add relevant data points to inform the research itself. This is an invitation for the average person to be a part of the conversation of accelerating vectors of the developing world – and eventually contribute to it.

This is the challenge we set for ourselves: to build a culture of human flourishing and design scalable frameworks towards that end.

We are actively looking for researchers to partner up with via our call for research proposals [here](#). We will be

accepting applications until the end of July for our first pilot experiments, and will be reviewing on a rolling basis for future cohorts.

Through our exploration of the intersection between technology, design, and human values, we have set the stage for ongoing collaboration. As we move forward, it is our hope that our continued efforts will inspire and enable the creation of a world where human flourishing is at the forefront of our collective endeavors.

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