

PhotoThings: Designing child-friendly ways into personal photo archives

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Abstract

Young children's lives are documented through vast numbers of digital photos, yet these images are often dispersed across devices in ways that offer little structure for reminiscence or understanding life story. For children whose experiences span multiple caregivers or shifting relationships, developmentally meaningful access to photos is especially important. This pictorial explores how child-friendly structures for navigating and displaying photos might support such understanding. Through autobiographical Research through Design with my five-year-old daughter, I developed PhotoThings—a set of physical–digital artefacts connected to a child-owned archive. The work foregrounds sensitising concepts including: increasing ownership, playfulness and performativity, self-direction, comprehensible structures, and narrative anchors, offering directions for design in this space.

Authors Keywords

Research through Design, Children, Photographs

Introduction

Taking, sharing, and storing photos in the cloud has become a routine part of everyday family life, with adults often documenting early childhood in great detail. Alongside printed photos or digital frames on display in the home, many images are shared and revisited on a parent or carer's phone, where access and early reminiscence are typically guided by an adult. Such moments matter for young children's developing autobiographical understanding: early conversations about photos help them learn how to tell personal stories, recognise that past experiences are meaningful, and begin to form a coherent sense of self within their attachment relationships [7,8].

In HCI, photos are understood as powerful family resources that support storytelling, reflection, and connection [26,21]. Yet despite substantial attention to how families archive, manage, share, and experience digital photos (e.g. [20,25,9,3]), far less work has considered young children's access to these archives. As Vyas et al. [32] note, children are often mentioned in family-oriented design research but rarely treated as primary users. Contemporary photo collections are also vast and fragmented, spread across devices and cloud services in ways that make them difficult to curate and are seldom revisited in meaningful ways. Recent work highlights that current infrastructures prioritise PhotoWork—management and retrieval—over the experiential PhotoUse that supports reminiscing and storytelling [2]. As a result, photo archives tend to embody adult patterns of organisation rather than the ways children aged 4–7 organise and make sense of the world. Printed albums and frames remain meaningful

in family life, but the scale and pace of digital photo-taking means many images important to children are never printed or easily accessed.

This Research through Design (RtD) project explores how young children might engage more meaningfully with their own photo archives by moving beyond adult-controlled devices and entirely screen-based interactions. Children are photographed constantly, yet the images that document their lives are rarely brought together in a way that feels coherent or centred on their perspective. Physical–digital interactions align with the material, playful ways young children engage with the world, offering opportunities for shared looking, joint attention, and collaborative storytelling that are often difficult to achieve on a parent's phone. These qualities are well documented in a systematic review of physical–digital play technologies, which shows that tangible and embodied interactions tend to support richer engagement, co-present attention, and social meaning-making compared to screen-only interfaces [31].

This pictorial presents a set of autobiographically grounded design explorations that show how physical–digital interactions can support young children in accessing, displaying, and making sense of their lives through personal photo archives. PhotoThings illustrates how tangible, single-purpose artefacts could support a more coherent life story, enable children to explore themes and relationships that matter to them, and offer child-led ways of keeping important people, places, and moments visible in everyday family life. It highlights how design can align with children's developing ways of understanding and extend the

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forms of meaning-making that photos already afford in early childhood.

Autobiographical Design

As Wallace et al. note [12], first person and autobiographical approaches are increasingly recognised in HCI [12,16,1,15], with a move away from earlier scepticism about their rigour as their value for accessing private spheres of life [4] becomes clearer. This pictorial adopts such an autobiographical RtD approach, which enabled me as both a designer and an adoptive parent, to work closely with the emotional and practical realities of family photos and to respond directly to the everyday situations in which these interactions unfolded. Much of the work took place while our daughter was 5 years old, during a five-month research sabbatical, allowing

extended periods of making, reflection, and iteration in close dialogue with our daughter and our family routines. Like other autobiographical design work conducted within families [10,23], the process unfolded informally and responsively as part of everyday life.

This situatedness means the goal is not to offer generalisable findings or to evaluate long-term use. Instead, the pictorial presents the designed artefacts themselves and the detailed design rationale behind them, responding to calls for richer accounts of design processes in HCI [30,5,27,35,17]. In line with Gaver's account of RtD, the contribution lies in the conceptual insights and design possibilities surfaced through these artefacts rather than in propositional claims or generalisable models [11,13], while offering a

foundation for future studies with other families [23]. Accordingly, the focus here is on design and reflection, rather than reporting on use or impact.

Design Context

Adoption provides an important backdrop for this work. For adopted and care-experienced children, photos often span multiple households, caregivers, and periods of care, rarely forming a single coherent archive [14]. Life story work, including tools such as life story books, is central to adoption practice because it supports children's developing identity by helping them understand both past experiences and present relationships in developmentally appropriate ways [28,29]. Narrative psychology further highlights that identity development in childhood involves organising personal experiences into a coherent story over time [37]. Communicative openness involves ongoing, everyday talk that keeps adoption present rather than treating it as a single disclosure, and it relies on helping children revisit relationships, acknowledge birth family, and hold multiple family connections in mind [18]. Displaying photos and making important people visible in daily life can support this process by fostering empathy, sustaining connection, and creating gentle openings for conversation [6]. While adoption provides the situated context for our family, many families navigate distributed, shifting, or multi-household relationships. The design challenges raised here therefore speak more broadly to how interactive systems might help children make sense of the people, places, and moments that matter to them.

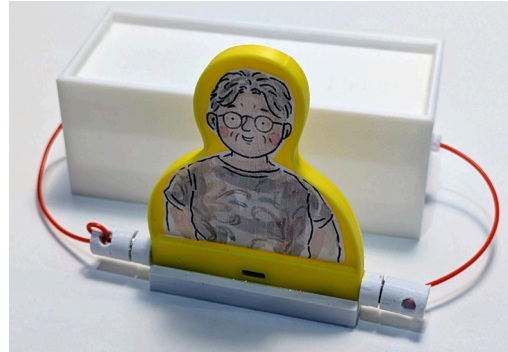
Ethics and Privacy

This work received institutional ethical approval and follows established practices in autobiographical design. No children were recruited as participants; the only child involved was my daughter, whose engagement with the prototypes occurred naturally within everyday family life. Nothing introduced through the designs was unfamiliar to her, as photos and conversations about her life story are already part of our family routines. Interactions were entirely voluntary and treated as opportunities for play or conversation, without asking her to perform tasks or provide feedback. No recordings or structured data were collected; insights come solely from my own design reflections. Personal details have been handled using a privacy-preserving approach, and no identifiable family photographs appear in this pictorial. A demo PhotoThings system was built for dissemination using non-identifiable content.



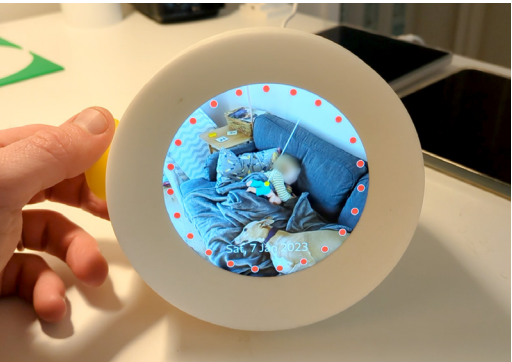
“Who’s in the box? Let’s look and see!”

At age 3, our daughter loved rhythmic, repetitive play, so this early box showed a new person each time it was opened. It helped her learn about important people in her life. It was playful and engaging, but the interaction was fairly short-lived as she developed.



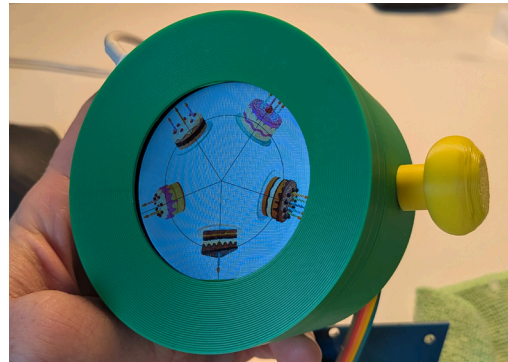
Inspired by ‘The Invisible String’ book

This prototype explored relationships by physically connecting illustrated people with string. Multiple figures could be joined to reveal photos of them together. It introduced ideas about connection, but proved too fiddly for independent use.



Screen-based navigation

Early attempts at screen-only browsing were difficult to navigate. They offered no physical anchor or structural overview, making it hard to support comprehension or meaning-making.



Towards physical, single-purpose artefacts

Ultimately, elements from these experiments were translated into direct, single-purpose physical devices. Simpler, more tangible ways to explore and display the parts of her story that matter.

Increasing Ownership Archives can be designed to support growing ownership while maintaining privacy and security.

Coherence Bringing dispersed photos into one archive and timeline helps children connect earlier experiences to the people and places important in their life today.

Consolidating a Messy Archive

Working on our daughter’s life story book highlighted how important photos are in helping her connect her past with her life now. As Dylan et al. [6] note, photos play a central role in supporting children’s developing sense of identity and belonging, particularly when their early experiences span multiple caregivers or contexts. In our case, this includes not only everyday family photos but also pictures from her time with foster carers and from regular meetings with birth family members. Adoption is one part of her story, but not the whole; what matters is helping her make sense of the people, places, and experiences that shape her life as she grows.

As adopters, we hold responsibility for ensuring our daughter has access to the important documents and materials from her early life. Yet during the adoption process, her photos were scattered across WhatsApp, emailed documents, shared drives, and printed materials, including those sent through formal letterbox contact. Integrating these into our own cloud accounts felt at odds with supporting her long-term ownership of her story. Working on the life story book highlighted the importance of coherence—bringing past experiences into the present in developmentally appropriate ways—and this guided our decision to consolidate her photos into a single place and to build an archive that, as she grows older, she can add to, reorganise, and eventually manage independently.

Creating a Local Child-Owned Archive

To support this, we created a single, local archive rather than relying on commercial cloud services. Both for safeguarding, and as personal family preference, we do not share photos on social media, only with close family and friends through WhatsApp. Creating a single, stable archive felt important for privacy, security, and long-term ownership. The archive runs on a Raspberry Pi 5 using a PhotoPrism server, stored on a physical drive that can be disconnected or backed up at any time. Keeping the archive local ensures the photos remain hers: something she can eventually access, reorganise, delete, or move without dependence on third-party systems. We chose the decentralised PhotoPrism platform to support privacy, security, and this future transfer of ownership, while still allowing us to use local AI tools to help organise people and label photos.

The next step was to design IoT devices to connect with PhotoPrism to provide child-friendly ways into this local archive. These resources had to offer ways of exploring, navigating, and displaying photos that matter to her—without relying solely on adult-controlled devices, and until she has her own tablet or phone. Sketching and prototyping helped surface the design sensitivities that shaped Lines and Wheels.

Our Decentralised IoT Network for Photos and Videos

This spread shows how the PhotoThings system fits together. It provides a handy reference for the elements that appear again in the Wheels and Lines sections.

PhotoThings Server (nodeJS)

Handles most system logic. Wheels and Lines IDs trigger handlers that define their interactions.

MQTT Broker (tcp, ws)

Responsive, robust, and local, and was easy to extend with new topics and data fields during development.

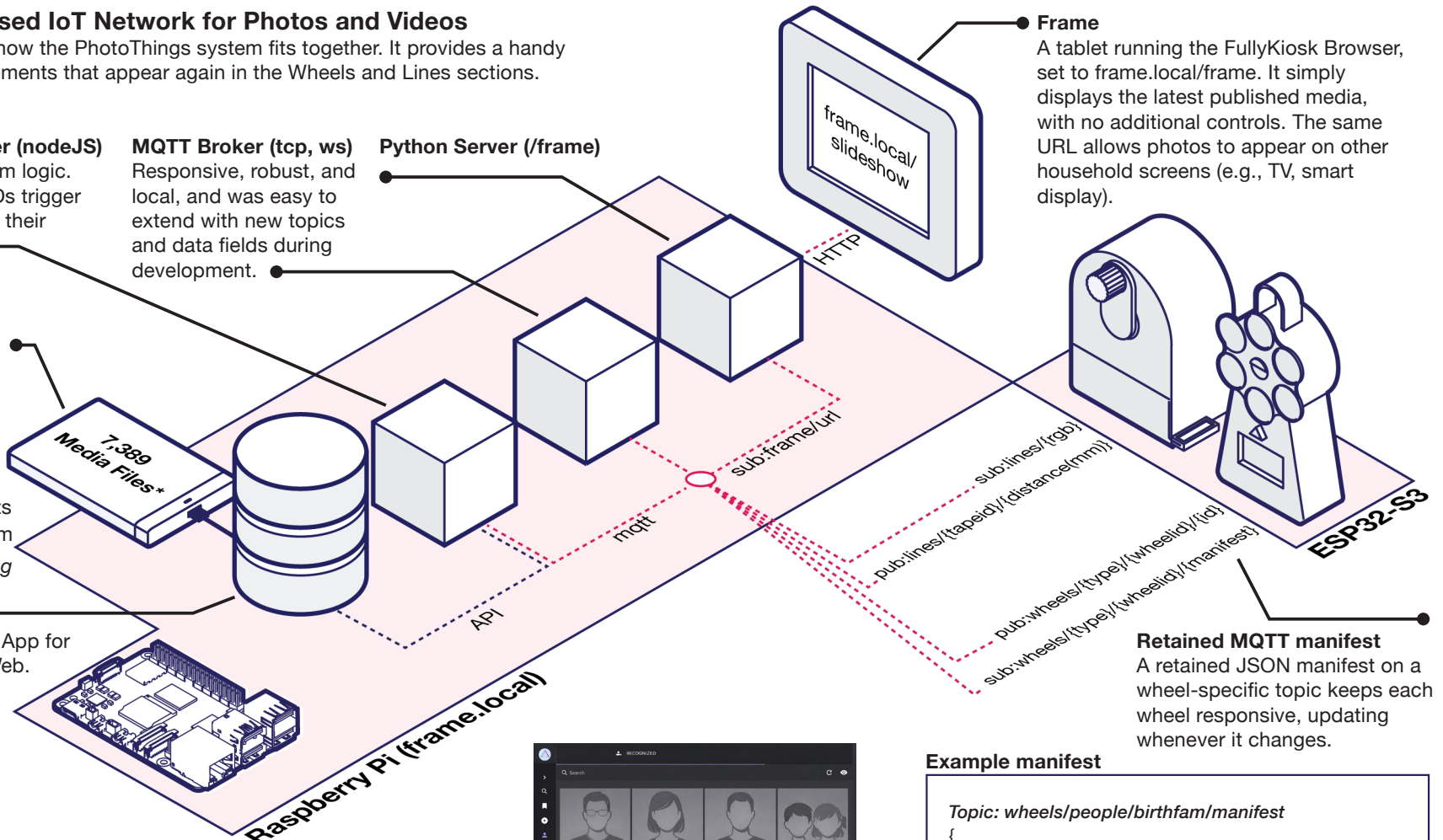
Python Server (/frame)

SSD Drive Archive

Photos & Video:
WhatsApp Media
Email Attachments
Google Photos
Scanned Albums
Adoption Documents
School Dojo Platform
*at the time of writing

PhotoPrism®

AI-Powered Photos App for the Decentralized Web.



Frame

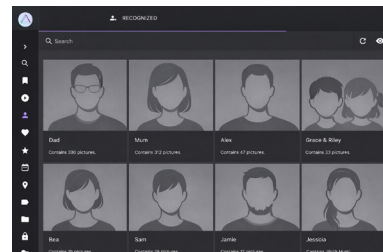
A tablet running the FullyKiosk Browser, set to frame.local/frame. It simply displays the latest published media, with no additional controls. The same URL allows photos to appear on other household screens (e.g., TV, smart display).

Retained MQTT manifest

A retained JSON manifest on a wheel-specific topic keeps each wheel responsive, updating whenever it changes.

Managing the Archive

At present, new photos are uploaded from our smartphones to PhotoPrism via WebDAV when connected to the local network. Otherwise, I manage the archive manually, curating and organising content for PhotoThings and involving our daughter where appropriate. This setup is intentionally makeshift: descriptions, tags, and albums in PhotoPrism are repurposed as lightweight data structures for Wheels and Lines. The aim at this stage is not to redesign PhotoPrism, but to investigate how children interact with a photo archive through physical-digital resources.





For example - PhotoPrism groups photos by recognised faces, giving us a ready-made UI and categories for building Wheels organised around people.

Example manifest

```

Topic: wheels/people/birthfam/manifest
{
  "segments": 5,
  "byIndex": [
    [{"id": 101, "name": "Alice", "label": "birth mum"}],
    [{"id": 103, "name": "Sophie", "label": "sister"}],
    [{"id": 104, "name": "Tom", "label": "brother"}],
    [{"id": 105, "name": "Joe", "label": "brother"}],
    [{"id": 106, "name": "Nadia", "label": "nanny"}]
  ]
}
    
```

APRIL	
TUE	
1	
WED	
2	
THU	
3	
FRI	
4	
SAT	
5	
Holidays!	
MON	
7	
TUE	
8	
WED	
9	
THU	
10	
Party!	
SAT	
12	
SUN	
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MON	
14	
TUE	
15	
WED	
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WED	
17	

Stickers to mark occasions and link with photos.

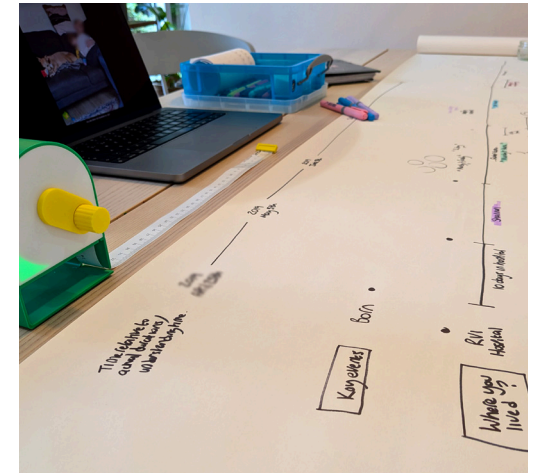
Lines

This prototype is a curated physical timeline that pulls out like a measuring tape. Different tapes can show metrics such as age, height, or calendar time. Digital photos can be mapped onto these scales, or placed along the tape using PhotoPrism, to highlight significant events or periods of growth, supported by labels and illustrations that make personal meaning clearer over time.

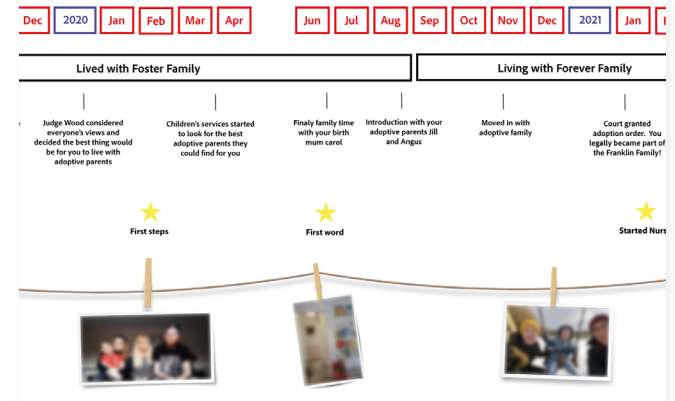
The measuring tape format emerged as we explored alternatives to cloud-based timelines, which centre on dates and can feel abstract for children. Our daughter enjoys the tangible act of being measured and reflecting on how much she has grown, so a measuring tape felt familiar and engaging. Throughout, I was guided by the idea of a timeline that gives an immediate sense of time through length and invites shared looking.

Within our daughter's life story book, we included a timeline of early events from a social care perspective. This has helped provide an overview of experiences that can otherwise feel disjointed, and often becomes a prompt for conversation. Lines extends this approach by aligning photos with these key early events, helping her weave them into a more coherent and meaningful understanding of her story.

While playing with free IKEA paper measuring tapes, we began drawing directly onto them. An early prototype involved pulling the tape out and marking events as we went. This gradually developed into the more permanent life story tape shown on the next page. Through this process, it became clear that tapes would need to be swapped for different periods, could include different layouts of information (while remaining chronological), and could be drawn on and added to after new experiences. In this way, Lines can support both looking back at earlier events and planning or talking about events still to come.



An anonymised extract of a timeline in our life story book, where photos help show her age and context alongside key early events to support comprehension.



The width of tape was carefully considered to be clearly legible, whilst still being small enough to be usable, and suggestive of a tape measure. The main body was designed to be larger than a standard tape measure to be easy to handle.

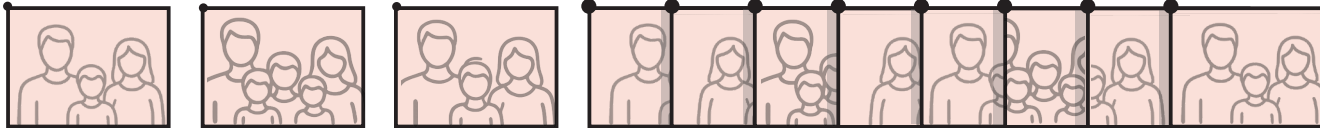


This tape is to scale at 2.2cm



Randomly filled proportionally to dates

Chosen photos in an album ("2nd Birthday") on PhotoPrism



`{tape-id}{event-name}{tape-colour}`
`{start-cm}{end-cm}`

Currently, each tape for Lines is an album in PhotoPrism that includes a simple coded tag in the description that defines its position.

Life Story Tape

Although a very long tape, up to three metres, initially seemed impractical, prototyping showed that pulling it out was performative and fun, especially when reaching into the past. In line with Joy Rees [28] and the idea of beginning from a secure base, our core Life Story tape starts from the present, allowing her to explore and talk about her life before adoption only when she wants to. This secure base also reflects broader work on family narratives, where photos and shared stories help adopted children build a sense of belonging and understand who loves and cares for them [7].

We first planned for the tape to represent an entire period of time, but this became confusing for our daughter because there were too many photos and

the sequence changed too quickly. It made more sense to focus on periods that were significant in her life story. These included transitions, key events that were essential for understanding her story, and fun occasions she wanted to highlight.

Curated albums therefore appear when moving over marked events on the tape, and the periods between them are filled by a simple algorithm that selects photos from those months. This keeps key events prominent while still giving a visual and conversational sense of progression, growth, and age. These significant events became anchor points [33] among more everyday photos, providing stable reference points that help organise the tape into meaningful segments rather than an undifferentiated sequence.

Structured Meaning-Making

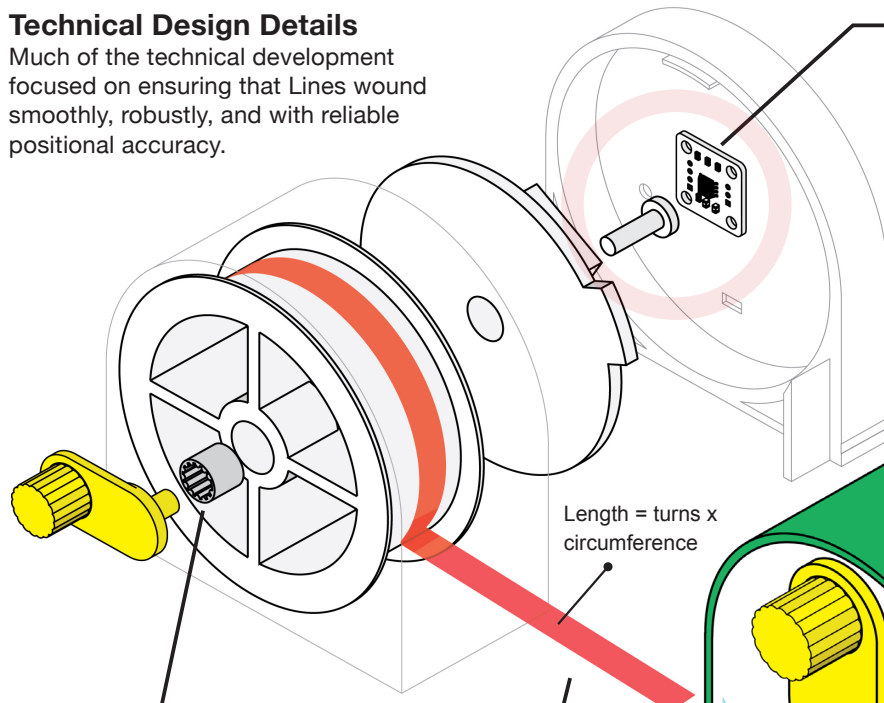
Labels, illustrations, and a large-scale layout give form to key events and developmental changes. Significant moments are mapped deliberately, while gaps are automatically filled to preserve a sense of duration and tangible growth.

Playfulness and Performativity

The physical act of pulling out the tape is immediately engaging for children. Its length, movement, and scale create a shared, observable experience that invites exploration, storytelling, and playful co-participation.

Technical Design Details

Much of the technical development focused on ensuring that Lines wound smoothly, robustly, and with reliable positional accuracy.



Counting Spool Revolutions

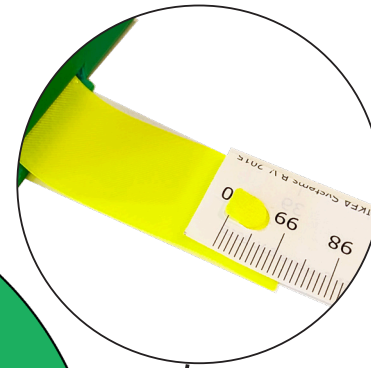
A magnetic encoder sits beneath the spool and senses rotation using a small radial magnet mounted on a pin. This provides accurate readings of how far the tape has been pulled.

Tape Material

The current tape is printed on thick paper, which will wear quickly with repeated use. This was sufficient for development and easy to reprint, but future work will explore more durable materials suitable for long-term handling.

Swapping tapes

Tapes can be changed by pulling the full length out. A small printed-in-place hook aligns with a punched hole in the tape, allowing a new tape to be attached and wound back in. At present, this still requires help from a grown-up.



Length = turns x circumference

Maintaining Accuracy

Accuracy depends on the tape not slipping on the spool. A one-way bearing prevents the spool from winding forward and unravelling. This means the tape can be pulled out freely but can only be wound back in, ensuring stable readings.

Mapping rotation to tape length

The circumference of the spool maps directly to the tape length pulled. As the tape moves, the encoder tracks rotation to an accuracy of <1 mm.

Raised base for smooth winding

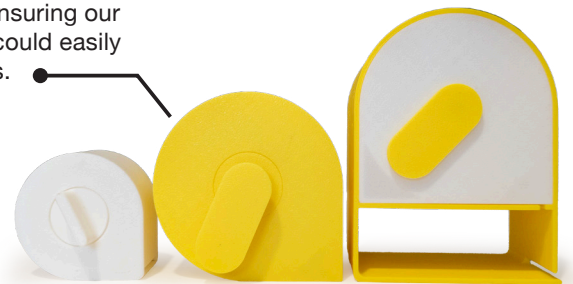
Creates space for winding on a flat surface and keeps the tape lying flat, while still allowing it to be used like a normal measuring tape.

Stable pulling

Rubber base stops lines from moving while the tape is pulled across a floor or table.

Iterations

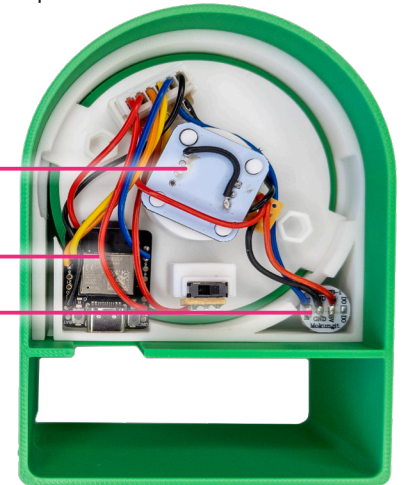
Scale was a significant factor in ensuring our daughter could easily wind Lines.



Encoder AS5600

ESP32-C3

Addressable LED



Wheels

The design of Wheels grew out of work on Lines, but was created to better support everyday display and exploration. As with life story books, coherence and comprehension remained central concerns. Lines offered a structured way of organising events, but we found that understanding life story was also supported by related information, such as people, our daughter's relationships to them, and important places from both past and present.

Understanding photos is a developmental process, and structuring them meaningfully helps children make sense of what they see. Drawing on long-standing uses of themed circular illustrations in early-years education, such as calendars, seasonal wheels, and daily routines, we explored circles as predictable, repeatable forms that support comprehension. This was reinforced by classroom materials (including Twinkl resources) and informal conversations with our daughter's teachers. Developmental psychology highlights that children in early childhood rely on concrete, stable symbolic structures to organise information and revisit experiences [19]. Picturebook research similarly shows that early readers draw meaning from the interplay of images and text [24], and Wheels adopts

this multimodal approach by combining short labels and illustrations on the wheel with photos on the frame.

While Lines was valuable in supporting guided conversations around key events, we also wanted something she could use more independently. Wheels offers this, creating opportunities for exploration, discovery, and open-ended storytelling across both playful and more formally structured themes. As with Lines, some wheels draw on adoption-related aspects of her life story, but these were never separate from everyday family life; many simply reflect the people, places, and experiences that matter to her.

Playful, Self-Directed Exploration

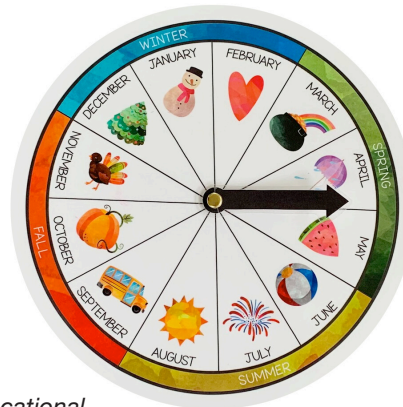
A tactile, cause-and-effect interaction supports repeated, child-led exploration.

Predictable, Comprehensible Structure

Consistent circular layouts provide a repeatable pattern that helps children organise themes and relationships.



As the wheel spins, photos and text shift quickly in response, creating a direct and playful way to explore photos.



Educational theme wheel as inspiration



Wheels snap into place when the yellow D-shape is aligned and the circle looks complete.



A combination of photos, illustration and simple, legible text supports comprehension for early readers.



Date Wheel

This provides a default way of exploring all photos in the archive. Each month shows a corresponding slideshow, and a full turn of the wheel moves between years as shown on the screen. The wheel can spin quickly, allowing children to move easily through long periods of time. Each month is paired with a simple illustration that acts as an anchor point, often reflecting seasonal cues or events that also appear in the photos themselves.

Narrative Anchors

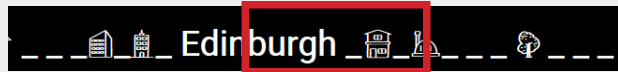
Recognisable structures and phrases that help children begin conversations with others, but also support independent rehearsal and storytelling. These are key processes in developing personal narrative and understanding experiences over time.

Day Wheel

This wheel was designed to support reflection on more recent events. Research on joint reminiscence shows that caregivers often talk with young children about very recent experiences, using these conversations to support emotion regulation, conversational engagement, cognitive skills, and early understandings of time [22]. These near-term reflections help children make sense of what happened “yesterday” or “today,” before abstract dates become meaningful. Our daughter often wants to revisit photos shortly after taking them. Compared to the Date Wheel, this wheel offers a more immediate, macro view of the past few days. It also draws on familiar early-years educational wheels that support recognition of the days of the week and the idea of yesterday and today, with actual photos of recent events further supporting comprehension.

People Wheels

People Wheels are particularly important, focusing on grouping people based on their relationship to our daughter. Photos provide a concrete representation of each person, supported by short text labels, and stickers work for the photos because they can be easily changed or updated. She has many significant people in her life, and supporting engagement with both birth and adoptive family is central to communicative openness and acknowledging her dual heritage. This can sometimes be confusing for her—she sees many people regularly, including cousins and brothers who are the same age. Grouping the wheels into meaningful relationships, such as birth family, cousins, and friends, helps provide clarity. Choosing a person to display also gives her control over keeping important people present in her everyday life.



A text marquee moves in either direction as the wheel is spun.



Places Wheel

This was designed to highlight important places in our daughter’s life. We travel frequently to visit family, and she has lived in several different places in her early years, such as foster care and our previous home, that are important to acknowledge. Her interest in the Google Maps dashboard during car journeys inspired us to link this wheel to the way we already talk about travel, using journey time and miles. The wheel begins at home, and as it is spun, the displayed travel time increases towards specific destinations—for example, “Grampa John’s house in Oban”. This interaction supports emerging understanding of time, distance, and place by grounding them in lived experiences of travel and family routines. It helps turn abstract geographical ideas into something immediate, playful, and meaningful.

Theme Wheel

This Wheel uses AI labels which are indexed by PhotoPrism to group photos into broad themes such as “Sleep”, “Read”, “Create”, “Party”, “Eat”. The wheel offers a playful way to explore different aspects of daily life and experience. We expect to develop themes further in line with her interests. Many more labels could apply, but these were chosen because they represent a broad range of meaningful, everyday activities for our daughter.



Example of Play



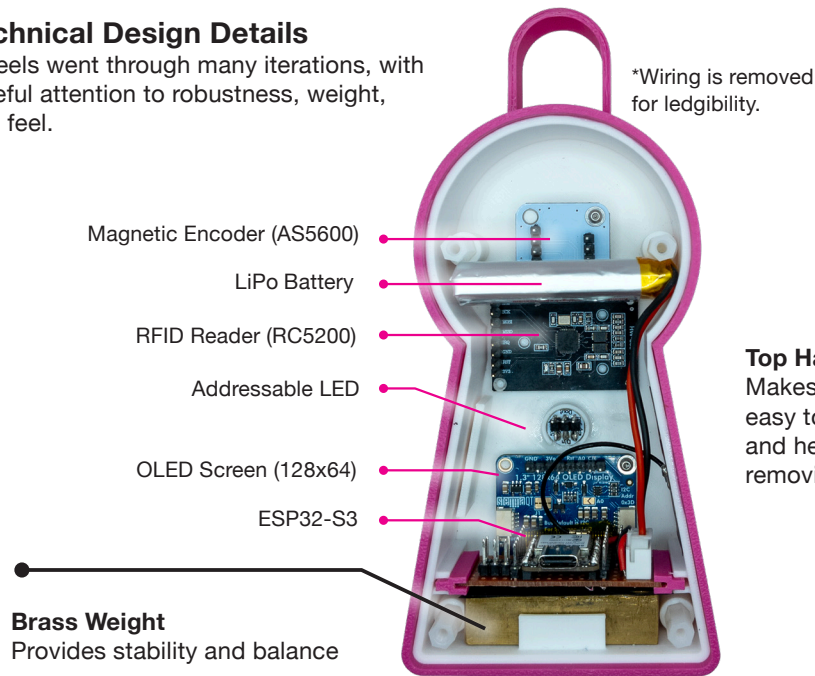
Example of Ride

Album Wheel

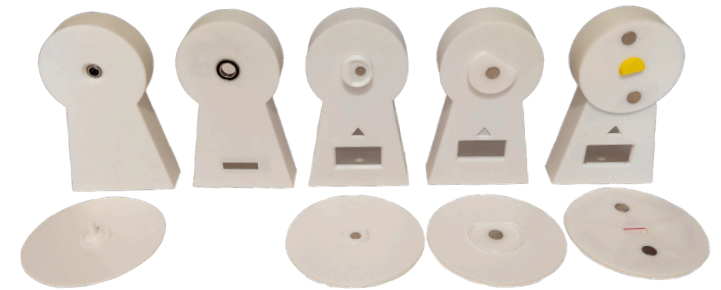
This Wheel is simply a way of browsing individual photos within a specific album created in PhotoPrism. Unlike the other wheels, it does not organise content into fixed segments or display a slideshow. Instead, each half-turn changes the photo and displays the associated metadata. This offers a quick, flexible way to focus on particular occasions or themes. So far, we have created one for baby photos, one for toddler photos, because our daughter loves revisiting these, and another for our first Christmas together. These wheels could also be drawn by a child to celebrate a recent event or highlight a moment that feels important.

Technical Design Details

Wheels went through many iterations, with careful attention to robustness, weight, and feel.



Top Handle
Makes the device easy to pick up and helps when removing Wheels.

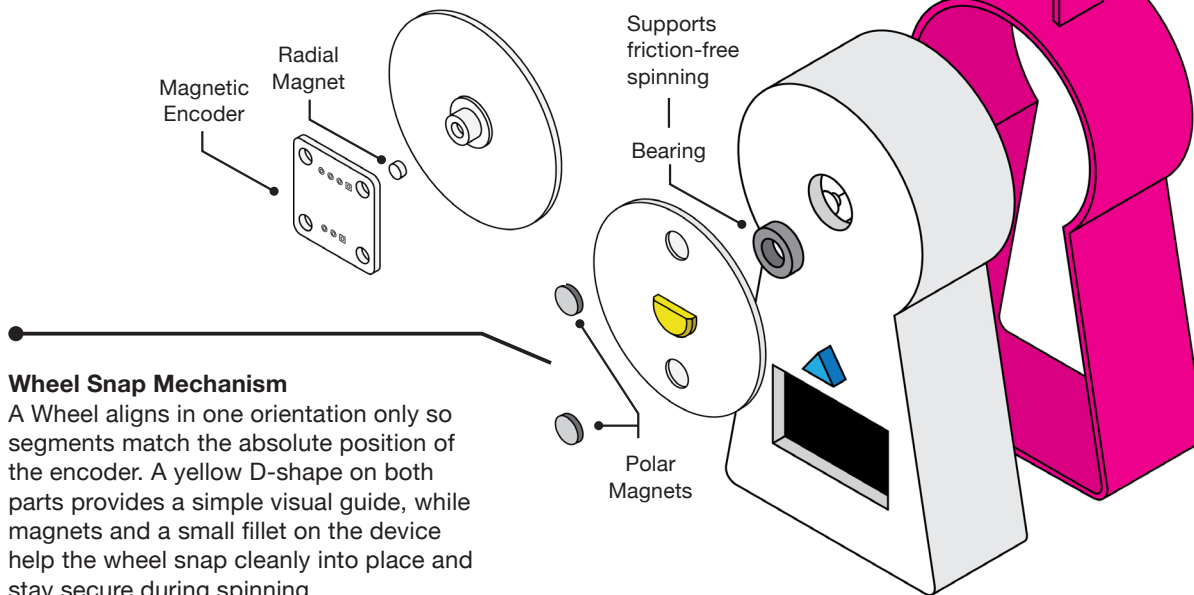


Developing the Wheel Snap
Creating a robust and easy wheel-swapping mechanism took focused iteration. It works well for our daughter, though matching the shapes needed some practice.

Earlier prototypes placed the encoder magnet on individual wheels to avoid visual alignment, but the latching mechanisms were difficult to remove.



Early Iterations



Wheel Snap Mechanism

A Wheel aligns in one orientation only so segments match the absolute position of the encoder. A yellow D-shape on both parts provides a simple visual guide, while magnets and a small fillet on the device help the wheel snap cleanly into place and stay secure during spinning.



RFID for Detecting Wheel
The wheel is recognised when an embedded RFID tag spins past the reader on the device. A separate code-block/interaction is activated for each RFID tag ID.

Discussion

PhotoThings, and the design rationale presented throughout this pictorial, highlight how children access and make sense of photo archives. Instead of treating children as secondary users, this work explores the value of designing archives in which they can be active participants. Supporting belonging, identity, and life story calls for developmentally appropriate ways of engaging with photos. In early childhood, comprehension and emotional meaning are intertwined: recognising who is present, what happened, and how events connect helps children build a coherent sense of their own life. While caregivers scaffold this through conversation, tangible and visual anchors could extend this support and enable more independent use.

Following Broekhuijsen et al.'s [2] call to focus on PhotoUse, we propose sensitising concepts for others designing in this space: increasing ownership, coherence, structuring, playfulness and performativity, self-directed exploration, predictable structures, and conversation anchors. These sensitising concepts provide a general sense of reference and guidance for exploring the design space, helping to inspire and orient design attention without constraining interpretation [38,39,40]. The artefacts themselves form part of the contribution, operating alongside these concepts to articulate and make tangible aspects of this space. Together, they draw attention to how photo archives might be shaped to support children's developing sense of ownership, understanding, and self-directed exploration.

Work on communicative openness and life story practice highlights how photos support children whose early experiences span multiple caregivers or contexts. In our family, gathering and organising photos has been both a practical responsibility and a way of holding aspects of our daughter's early life until she is ready to take greater ownership. This work also surfaces tensions between supporting a child's sense of ownership and the realities of parental curation, particularly in the context of adoption, where life story practice emphasises maintaining an honest

account of a child's experiences [28]. PhotoThings sits at an earlier stage, offering tools for engagement before a child is able to take fuller ownership, and is not intended as a permanent system but as part of a broader developmental trajectory as their digital life grows. As such, the archive and its structure are initially shaped by the caregiver. At the same time, these materials do not fix a single account, allowing her own interpretations to emerge over time.

Autobiographical design enabled a depth of engagement that would have been difficult to achieve through participatory work with another family. As both designer and adoptive parent, I hold an embodied understanding of the developmental, emotional, and relational contexts shaping my daughter's engagement with photos. Adoption practice foregrounds the importance of life story and communicative openness, making issues of continuity and belonging central to everyday reflection. This positioning made me attuned to aspects of photo use that might otherwise be overlooked, including emotional significance, relational organisation, and a child's need for increasing ownership. Accessing another family's archive would have posed ethical challenges, reinforcing the value of autobiographical approaches. Similar methods could deepen understanding across other family contexts.

A five-month sabbatical provided focused time for this iterative work, showing that rigour is not only about long duration but about the quality of engagement: concentrated, design-led inquiry that involves making, living with, and adapting artefacts can generate insights that fragmented time cannot. This period also included the emotional and practical labour of gathering our daughter's early photos, sometimes sparse and sometimes dispersed, and preserving them with care. I recognise that many families experience this differently, including those with limited material or more difficult relationships with birth families. This pictorial reflects only one situated account, but it contributes to wider conversations about how design can help children make sense of personal histories with sensitivity and respect.

Connecting with Wider Concerns

While PhotoThings explores ways in which children might engage with personal archives, the work also draws attention to broader questions around children's rights, digital traces, and how images move across platforms. Children grow up within distributed image ecosystems where photos travel easily and often without their awareness or long-term control. Creating a local, child-owned archive made visible how images can circulate beyond intended contexts, raising questions of privacy, consent, and longer-term stewardship of children's images.

This links to concerns about sharenting, where caregivers share children's images online. As the 5Rights Foundation notes, digital platforms encourage posting because it generates valuable data for them, often clashing with children's future expectations of privacy [36]. Recent cases of young adults objecting to images shared in childhood highlight ongoing concerns around how interactive systems might better support children's emerging agency and long-term rights.

Future Work

PhotoThings gestures toward alternatives. Instead of assuming cloud services as the default repository, families may benefit from more joined-up, privacy-preserving, local, child-centred systems that align better with children's developmental and ethical needs. From a social care perspective, future work could explore how such systems might support secure sharing between adoptive and birth families, enabling communicative openness and helping manage the long-term journeys of children's photos in ways that uphold children's rights as they grow.

PhotoThings are now embedded in everyday use within our family, with ongoing reflection forming part of this design inquiry.

Selection and Participation of Children

No children were recruited as research participants. The only child involved was the author's five-year-old daughter, whose engagement with the prototypes occurred naturally within everyday family life as part of an autobiographical design process. All interactions were voluntary and informal, and she was never asked to perform tasks, repeat actions, or provide evaluative feedback. Activities involved familiar family routines, and nothing introduced was new or unexpected to her. Consent was obtained from both caregivers, and no identifiable images or personal details appear in this work. No recordings or structured data were collected; all insights derive solely from the author's own design reflections.

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