Designing with forest stories to explore what it might mean for forest-related technologies to "get it right"

Ferran Altarriba Bertran
Playful Living Lab
ERAM Escola Universitària de les Arts
Salt, Girona, Spain
Gameful Futures Lab, Research Centre of Gameful Realities
Tampere University
Tampere, Finland
ferran.altarriba.bertran@eram.cat

Heidi Biggs
School of Literature, Media, and Communication
Georgia Institute of Technology
Atlanta, Georgia, USA
hbiggs7@gatech.edu

Oğuz 'Oz' Buruk
Gameful Futures Lab, Research Centre of Gameful Realities, Faculty of Information Technology and Communications
Tampere University
Tampere, Finland
oguz.buruk@tuni.fi

Angella Mackey
Masters Digital Design
Amsterdam University of Applied Sciences
Amsterdam, Netherlands
a.m.mackey@hva.nl

William Odom
School of Interactive Arts and Technology
Simon Fraser University
Surrey, British Columbia, Canada
wodom@sfu.ca

Oscar Tomico
Industrial Design
Eindhoven University of Technology
Eindhoven, Netherlands
o.tomico@tue.nl

Abstract

This workshop invites researchers, designers, and practitioners from across HCI to explore how interactive technologies might contribute positively to human-forest interactions, and what it might mean for such technologies to plurally "get it right". We begin from the premise that technology can both enrich and harm forest ecologies: it may help us notice, sense, and connect in new ways, but it may also foster alienation or commodification if designed uncritically. Through research-through-design, workshop participants will share forest stories via boundary objects, co-create a metaphorical "shared forest" exhibition, draw on diverse HCI knowledges to speculatively prototype technologies responding to these stories, and reflect on the promising design directions that emerge. Our aim is not to identify a single "right way", but to surface plural, situated directions that feel worth pursuing. Outcomes will include a digital archive of stories and artefacts and an annotated portfolio of speculative prototypes to inspire future design/research.

CCS Concepts

• **Human-centered computing**; • **Interaction design**;

Keywords

Human-nature interaction, forest, research through design, interactive technology, more-than-human

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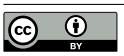

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1 Aims, Motivation, and Background

In a time of ecological crisis and rapid technological development, the role of interactive technology in shaping how people relate to the natural world has become an urgent and contested matter. HCI has a growing tradition of addressing human-nature relations, with strands of research anchored in diverse subcommunities such as more-than-human design [35], sustainable HCI [27], technology design for the outdoors [26], exertion technology [28], playful design [1], or slow technology [30], to name a few. Within this heterogeneous and rapidly evolving landscape, a growing body of work explores how technology might mediate human encounters with(in) forests. Researchers have approached this from myriad angles, for example: looking at how to situate sense-making of forests and forest experiences within forests themselves [11]; exploring how might we support human-forest interactions that balance human joy with more-than-human care [2]; designing technologies that support slow, mindful ways for humans to notice and make sense of forests and forest-related experiences [15][19][21][22][30][36]; discussing how designers can engage forest ecologies to better attend to posthuman perspectives [9]; or problematizing the very notion of "smartness" in the context of forests [13]. Cutting across these diverse contributions, we see a shared ambition to support humans in accessing rich lived experiences within forests, cultivate meaningful and resilient human-forest relationalities, and/or imbue these more-than-human entanglements with reciprocity and care. We situate this workshop within that emerging research area.

We begin from the premise that interactive technology has the potential to enrich human-forest encounters, if designed thoughtfully and sensitively. Many of its qualities hold promise for the

human-forest interplay: technology can enable asynchronous or remote forms of communication that would otherwise be impossible [8]; it can allow us to reproduce, manipulate, or duplicate physical objects digitally [17]; it can make it possible to store, retrieve, and play with rich layers of data [4]; or it can heighten our capacity to notice [24] and sense [12][29]; among many other promising traits. Yet, as many have warned in recent times, technology use in forests can also bring harm, for example: narrow, input-output designs risk compromising the experiential richness of being in the forest [33]; technologies that substitute direct engagement with forests can foster alienation from the more-than-human world, with negative consequences for both human well-being and for ecological health [33]; or designs that primarily position forests as resources for human consumption risk exacerbating anthropocentric understandings that damage ecosystems [34]. Together, these examples illustrate how designing technology targeting forests can have ambivalent effects: it can nurture rich, exciting more-than-human interactions as much as (if designed uncritically) it can instrumentalize, commodify, or reduce the complexity of human-nature interconnectedness, ultimately compromising the human-forest interplay.

That ambivalence speaks to the diffractive (i.e., multifaceted, overlapping, non-linear [5]) nature of technology mediation in more-than-human worlds. Technology use is not inherently good or bad, enriching or damaging, a promise or a risk – that is true for forests [33] and beyond [18]. Rather, it operates on a complex shade of greys, lending itself to a multiplicity of affordances, exchanges, and effects. In this context, the challenge we face as a technology design and research community is to avoid solutionist approaches, transcend anthropocentric perspectives, and critically engage with our practice with the aim of getting it right – creating technologies that contribute positively to human-forest relationships, and paying attention to (and addressing) new forms of harm that might emerge.

Aligning with calls (in more-than-human design research and beyond) for exploring what this challenge means in practice (e.g., [7][16]), we have an interest in exploring the design space of forest-related technology both critically [6][31] and generatively [14]. It is not enough to understand and mitigate what harms might come from designing forest-related technologies. It is also important to envision what positive impacts emerge when pivoting attention to care. For us to advance this design space, we need to carve design directions that make explicit the possible roles we can take in forest ecologies. This comes with a set of (we argue, very timely) questions: What might it mean to design forest-related technologies "the right ways"? What are these "right ways", assuming they are likely polyhedric and situated, and who gets to decide them? How might we leverage our diverse existing knowledges in HCI to support the design of these human-technology-forest assemblages, and what might we currently be missing that we should look out for elsewhere? What technologies might result from these design processes, and what might they look and feel like? What should such technologies seek to accomplish in the first place? And what can we do to introduce them in real forest ecosystems in ways that enrich, rather than erode, our interactions within forests?

These questions feel urgent: technology use in forests is beginning to gain traction, yet it still remains in an incipient implementation stage. The design space is still underdeveloped, and so is the industry that will inevitably grow around it. This offers a timely (and ephemeral) opportunity to consolidate the design space of forest-related technologies and orient it toward positive paths. With this workshop, we aim to carve out space for such a conversation by sharing present and future forest stories as an opportunity to foster a situated discussion on the opportunities and risks of incorporating technology in the human-forest interplay. We will bring together researchers, designers, and practitioners interested in technologies that mediate human interactions with(in) natural environments – particularly forests, but also encompassing broader and more fluid notions of what "a forest" might be. Our goal is to foster a diverse exchange among HCI researchers from different communities (i.e., including those within, but also beyond more-than-human design), with diverse lived experiences of forests, and with differing perspectives on the human-technology-forest interplay.

The workshop will be structured as a research through design [14] conversation with primarily generative [14] ambitions. We will lean on techniques of speculation [3], fiction [10], and fabulation [20] to ensure our hands-on, materially-rich discussions are also approached through a critical lens – assuming generativity and criticality not as opposing but rather as reinforcing. Through a range of designerly activities, we will surface layers of human-forest interactions that are worth cultivating, critically reflect on how these entanglements should be approached and designed for, and creatively explore how interactive technology might contribute to them in ways that feel desirable. We will combine hands-on activities with spaces for reflexive discussion, and we will draw on our academic expertise(s) in HCI (theoretical, methodological, designerly, or other) to collectively imagine and prototype technologies that could nurture forms of human-forest entanglement that feel worth cultivating by design. The outcome will be a portfolio of speculative prototypes that embody possible positive roles technology might play in human-forest interactions, annotated through the lived experiences that motivated them as well as the HCI concepts that were used to give them form. Beyond this material outcome, the workshop will create a space for multidisciplinary connections. Our broader ambition is to foster a community around designing technologies with and for human-forest interconnectedness, one that includes but is not exclusively anchored in more-than-human design. We hope the workshop will inspire new collaborations and chart emerging directions for HCI design and research in this exciting area.

2 Workshop Format, Length, and Activities

We propose an in-person, full-afternoon workshop that will span across two 90-minute sessions, with a short break in between. The workshop will lean on research through design [14] methodology, to foster a hands-on discussion interwoven with critical reflection [32]. We will create a safe space for participants to share relevant lived experiences and expertise with each other, afford opportunities for hands-on ideation and prototyping, and facilitate reflexive group discussions aimed at synthesis. To manage an optimal flow of such a hands-on workshop, and make sure everyone gets space in the conversation, we will limit the workshop to a maximum of 25 participants (organizers included). Below we provide an overview and breakdown of workshop activities:

- **Introduction (15'):** We will welcome participants, introduce the workshop aims and agenda, and give an overview of the activities for the afternoon.
- **Sharing forest stories (60'):** We will invite participants (ourselves included) to share with the group a personal story of a forest-related lived experience they think is relevant to the questions of what technology could, should, and/or should not do in human-forest interactions. To present their story, participants will be asked to bring a *boundary object* [25] (in the form of a forest material, an artifact, a photo, a drawing, or such) that embodies the story. The next section describes our plans for supporting participants to do that before the workshop. To make the collection of stories tangible, we will metaphorically craft a "shared forest" by placing the boundary objects on display on an impromptu exhibition space we will carefully curate in advance (see details below).
- **From stories to design (15'):** We will invite participants to take some time to informally reflect, either individually or in smaller groups, on the body of forest stories collected in the previous activity, and pick one or more that they would like to work with. While they do that, we will prompt them to start thinking about how their knowledge(s) in HCI might be useful to design for scenarios similar to the stories that resonated with them.
- **Break:** There will be a break for participants to freshen up and engage in informal conversations. During the break, participants will be encouraged (but not required) to casually begin speculating about ideas in anticipation of the following prototyping activity.
- **Speculative prototyping (45'):** Individually (or in small groups formed organically by affinity), participants will speculate how technology might contribute to the story they chose to work with. They will come up with a design idea and develop a lo-fi prototype using a range of materials we will provide (e.g., paper, markers, simple craft supplies, upcycled objects, foraged forest materials. . .).
- **Presentations (20'):** Participants will briefly introduce their prototypes in relation to the stories they chose to work with, making the connection visible by placing them right where they belong in the exhibition space (i.e. the metaphorical forest). As they witness each other's presentations, if participants can think of items from their HCI expertise(s) that could be relevant to the design directions the prototypes begin to carve, they will be encouraged to annotate the exhibition with post-its, noting existing concepts, methods, or works that might offer guidance to tackle the emerging design directions.
- **Reflection and synthesis (20'):** We will facilitate a discussion around the interesting design directions emerging across the interwoven forest stories and speculative prototypes, aiming to identify promising areas for future HCI design/research. We will also reflect on how a diverse range of HCI knowledge(s) might be helpful to guide those developments, trying to build bridges between the different subcommunities concerned with forests within HCI.
- **Farewell (5'):** We will wrap up the discussion and share our plans for extending the conversation (described in detail below), including how participants will be invited to stay engaged beyond the workshop.

3 Pre-Workshop Plans and Accessibility

Our pre-workshop efforts will be threefold: participant recruitment, participant preparation, and workshop organization. Each of these is critical to ensuring that the workshop brings together a diverse community, enables meaningful contributions, and provides a grounded and multi-sensory space for dialogue.

To recruit participants, we will set up a dedicated website and circulate the call for participation as widely as possible, aiming to reach beyond the HCI communities we already know and work with. The call will be disseminated through relevant mailing lists and social media communities, as well as to our professional and personal networks. Interested participants will be asked to submit a short expression of interest in a format of their choice (e.g., extended abstract, pictorial, video…). This should include a short bio, a note on the participant's interest in the workshop's theme, and, optionally, a description of their prior related work (if any).

To prepare participants, we will craft a package of pre-workshop materials. Participants will receive the package upon acceptance, giving them ample time to prepare for the workshop. This package will:

- Invite each participant to bring to the workshop a boundary object [25] (e.g., a forest material, artifact, photo, drawing, or such) that embodies a lived experience of the forest they consider relevant to questions of what technology could, should, or should not do in human-forest interactions. In the weeks leading up to the workshop, we will ask participants to send a short expression of interest informally describing their boundary object as well as the story it represents. That will allow us to prepare for workshop conversations and activities in advance, e.g., to curate the "shared forest" canvas in ways that reflect the actual content participants will bring, to gather prototyping materials that resonate with participants' stories and boundary objects, etc.
- Invite them to also bring a "toolkit" of concepts, theories, methods, or approaches from their HCI design/research expertise(s) that they feel could inform the workshop conversations or potentially be useful in this design space.
- Provide clear guidelines to support participants in preparing these contributions, including examples from each organizer and a short video where organizers share in first-person how they engaged in this reflective task. Special efforts will be made to craft these guidelines so that they are accessible to participants with diverse levels of experience in reflective, first-person, and/or practice-based work – again, trying to make the workshop relevant to and accessible for HCI researchers outside of the immediate scope of design research.

To organize the workshop itself, we will also carefully craft materials to help create an optimal space for the conversations we intend to have in situ. This includes curating a range of tangible materials to support prototyping (e.g., paper, markers, simple craft supplies, upcycled objects, and foraged forest materials) and setting up the exhibition space that will serve as the "shared forest" (see its role in the workshop in the section above). These preparations

will ensure that workshop conversations are not only intellectually engaging but also grounded, tactile, and multi-sensory.

As part of our preparations, and cutting across all the above, we will take accessibility seriously. For instance, pre-workshop guidelines and videos will be provided in clear, plain language (with captions for videos), and workshop materials will be designed to be inclusive and accessible to participants with different bodies, prior lived experiences, and kinds of expertise. We will also accommodate participants' specific accessibility needs on a case-by-case basis, ensuring all contributors can participate comfortably in both the preparatory and the in-person parts of the workshop.

4 Outcomes and Post-Workshop Plans

Because participation in the workshop will be based on short expressions of interest rather than formal papers, there will be no proceedings. Instead, our post-workshop efforts will be anchored in the design work produced during the workshop and the conversations that develop around it. During the workshop, one or more organizers will focus on documenting activities and the evolving exhibition space. This documentation will include photographs of prototypes, participant annotations, and collective reflections. Together, these materials will form the basis for multiple outcomes:

- The exhibition space itself (i.e., the "shared forest" created during the workshop) will remain as a material artifact of the event. We will explore possibilities for keeping it on display at CHI for the duration of the conference and for bringing it to other venues or fora afterwards (e.g., as an artwork to be exhibited at conferences such as DIS).
- We will create a digital archive of that exhibition and make it publicly available on the workshop website, ensuring that participants and the broader community can revisit and build upon it afterward.
- Drawing on the prototypes and annotations, we will curate a portfolio of promising human-technology-forest assemblages. Each will be annotated with the lived experiences and HCI knowledge(s) that inspired, guided, or motivated it. The portfolio will constitute a form of *intermediate-level knowledge* [23], interweaving consolidated HCI wisdom, novel (and tangible) design avenues, and vivid, situated lived experiences that motivated them.

Beyond these immediate outputs, we intend to disseminate the workshop events and conversations as academic publications, as appropriate, to be critically evaluated after the workshop. For example, we might write a short, lightweight article (e.g., for the interactions magazine) reporting on the workshop activities and highlighting salient insights from the conversations; or, depending on the depth and polish of the design work and underlying reflections, we might produce a pictorial (e.g., to be submitted at DIS) presenting the annotated portfolio [23] of speculative prototypes and/or reflecting on the workshop format as a method for generative inquiry. Across all these efforts, we will invite participants to be contributors to the extent they wish – either as co-authors or through other forms of acknowledgment. We have an explicit intention of ensuring that credit is shared and that the resulting publications reflect the collective spirit of the workshop. Through these outcomes, we aim to extend the life of the workshop beyond CHI, ensuring that the knowledge generated not only circulates within the conference but also fosters an ongoing community of researchers and practitioners interested in the design of technologies for the human-forest interplay.

5 Call for participation

This in-person workshop will bring together 15-25 researchers, designers, and practitioners interested in the role of technology in supporting human–forest interactions. We approach this space as both promising and problematic: technology can help us notice, sense, and connect with forest ecologies in new ways, yet it can also risk alienation, commodification, or harm if designed uncritically. Our aim is to create a space to reflect on these tensions and speculate on how we can "get it right" and what might be different ways to do so.

The workshop will be structured as a research-through-design conversation across two 90-minute sessions. Participants will share personal "forest stories" through boundary objects, collectively build a metaphorical "shared forest" exhibition, engage in speculative prototyping, and discuss the outcomes of these activities to uncover emerging directions for designing forest-related technologies that contribute positively to human-forest interconnectedness.

We welcome participants from across HCI and neighboring fields, including (but not limited to) more-than-human design, sustainable HCI, design for the outdoors, playful/slow/speculative design, design anthropology, and ecology. Having done substantial work at the intersection of forests and technology is not strictly required. We especially invite diverse perspectives and positionalities, including those not traditionally present at CHI. To take part, please submit a short expression of interest in any accessible format (text, pictorial, short video…) to *ferran.altarriba.bertran@eram.cat* before end of February 2026. Submissions should include a brief bio, a note on your interest in the theme, and (optionally) an example of related work. Selection will aim for diversity of perspectives, expertise, and positionalities.

There will be no formal proceedings. Outcomes will include a public digital archive of the shared forest exhibition and potential collaborative publications (e.g., a pictorial or interactions article). Details and submission instructions are available on the workshop website: *foreststoriesatCHI26.eram.cat*

6 Organizers

The organizing team brings together complementary perspectives on human-forest interactions, grounded in diverse research agendas and personal relationships with forests. We are based at different institutions and approach the topic from varied angles, which will allow us to foster a rich and multifaceted discussion. Collectively, we also have extensive experience designing and facilitating workshops at CHI and related venues, ensuring that the proposed workshop will be both well-structured and engaging.

Ferran Altarriba Bertran is an Associate Professor at ERAM Escola Universitària de les Arts (Salt, Catalonia), where he leads the Playful Living Lab. His research explores how to co-design technologies and experiences that support ways of living that are both joyful and caring. As part of this work, he investigates how technology can mediate joyful interactions in forest ecologies, building

on his personal relationship with forests as important spaces in his everyday life. Ferran has extensive experience organizing and facilitating co-design workshops, both in academic venues (e.g., DIS, CHI Play, CHI, and PDC) and in community contexts.

Heidi Biggs is a design researcher and assistant professor at Georgia Tech's School of Literature, Media, and Communication in the Department of Digital Media. Their research asks how the design of information technologies build and mediate relationships to the environment, how those relationships are more or less sustainable, and what other types of relationships we might design to the environment that imagine new ways of being in the world with more sustainable outcomes.

Oğuz 'Oz' Buruk is an Assistant Professor of Gameful Experience at Tampere University, Finland. His research focuses on designing gameful environments for various contexts such as body-integrated technologies, computational fashion, posthumanism, urban spaces, extended reality and nature. He adopts research-through-design methods such as speculative design, design fiction and participatory design.

Angella Mackey is a design researcher with the Civic Interaction Design group at the Amsterdam University of Applied Sciences. Her work explores embodied relationships to seemingly intangible, dynamic materials encountered in daily life, using techniques from research through design, first-person research, speculative design, and more-than-human design to materially engage them. Currently her research focuses on solar energy and the design of relational technologies that might support weather-guided ways of living in post-fossil worlds.

William Odom is an Associate Professor in the School of Interactive Arts and Technology at Simon Fraser University. He is the founder and director of the Homeware Lab (www.homewarelab.com) which explores a range of projects that inquire into topics including remaking outdoor technologies, long-term human-data relations, slow interaction design, and methods for developing the practice of Research-through-Design. He has co-organized numerous successful workshops at ACM CHI and DIS over the past 15 years.

Oscar Tomico is associate professor at the Department of Industrial Design at Eindhoven University of Technology on Design Research Methodologies for Posthuman Sustainability. His research expands the context of human-centered design and positions designers as part of complex ecological systems. Building on his research on 1st person research methodologies, he explores ecologies of design, production and use focusing on the impact they have on the co-existence and co-habitation with other-than-human actors, such as plants. He is currently involved in projects ranging from exploring more-than-human cohabitation in the greening of interior spaces through multi-species design, situating design practice as part of existing ecosystems, and analysing the impact of local regenerative social-ecological-technical systems of production.

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