SIG on Participatory AI

Identifying Research Gaps and Building Community Infrastructure for Citizen-Centred AI

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Abstract

The rapid deployment of AI technologies demands new approaches to ensure citizens shape the systems that affect their lives. Yet significant barriers prevent meaningful public participation in AI development: power imbalances, a lack of appropriate methods for non-technical engagement, and an absent infrastructure for sustained collaboration. This Special Interest Group brings together researchers and practitioners to systematically examine these challenges. Through interactive mapping exercises, challenge deep-dives, and world café discussions, we will identify critical research questions, document methodological gaps, and prioritise community needs. The session focuses on understanding why current participatory methods fail in AI contexts, establishing evidence for successful participation, and determining essential resources for scaling inclusive practices. By creating a shared research agenda and fostering cross-institutional collaborations, this SIG initiates a coordinated effort to transform AI development from an exclusive technical domain into an inclusive societal endeavour.

CCS Concepts

• **Human-centered computing** → **Human computer interaction (HCI)**; **Participatory design**; *Collaborative and social computing*; *HCI theory, concepts and models*; • **Computing methodologies** → *Artificial intelligence.*

Keywords

Participatory AI, Citizen-centred AI, AI democratisation, Community participation, Digital civics, Responsible AI

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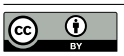

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1 Introduction

As AI systems increasingly impact society, a critical disconnect exists between AI development and meaningful citizen participation. While HCI has extensive expertise in participatory methods, translating these to AI contexts presents unique challenges that remain understudied. This SIG convenes researchers, practitioners, and advocates to collectively identify research gaps, methodological challenges, and infrastructure needs for advancing Participatory AI. Rather than proposing solutions, we aim to map the problem space: What questions should we be asking? What resources does our community need? Which collaborations could accelerate progress? Through structured activities including gap analysis, resource mapping, and needs assessment, participants will contribute to defining a research agenda for Participatory AI. Outputs include a landscape analysis of open research questions, an inventory of needed resources (datasets, tools, methods), and a roadmap for community infrastructure. This SIG establishes the foundation for a sustained research community focused on democratising AI innovation.

2 Format

The format of the SIG will be highly interactive, utilising structured activities that build upon each other to map the Participatory AI landscape. The session combines breakout groups, world café rotations, and collective synthesis using post-it notes and visual documentation. The 75-minute schedule is structured as follows:

(1) Opening (10 minutes): Welcome and introductions, followed by an overview of Participatory AI motivations. We will define session goals: "We're here to identify what we don't know and what we need."

(2) Activity 1: Mapping Current Practice (15 minutes): Small breakout groups document existing Participatory AI initiatives, examining: what participatory methods were used; who participated and who was excluded; what worked well and what failed; actual impacts on the AI system; and what resources/conditions enabled the work. Output: A shared visualisation/rich picture highlighting patterns.

(3) Activity 2: Challenge Deep Dive & Research Gap Mapping (25 minutes): Groups tackle specific challenge areas revealed by Activity 1, focusing on themes such as Participation Barriers & Methods, Power/Governance & Structure, Impact/Evaluation & Evidence, and Scale/Representation & Implementation. Groups

identify current state, core problems, research gaps, and priority levels.

(4) Activity 3: Resource & Infrastructure Needs Assessment (15 minutes): World café format with participants rotating through stations: Methods & Tools, Data & Case Studies, Collaborations & Funding, and Community Infrastructure. Participants annotate resource needs with feasibility concerns.

(5) Synthesis: From Gaps to Action (10 minutes): Quick report-backs, dot voting on highest-priority gaps and needs, and commitment to concrete next steps, including future events, working groups, and collaborative resource development.

3 SIG Outcomes and Next Steps

This SIG marks the beginning of a sustained effort to build research infrastructure and community capacity for Participatory AI. The session's outputs, including the research gap analysis, resource inventory, and priority roadmap, will be synthesised into a publicly accessible landscape report documenting the current state and future needs of Participatory AI research.

Building on this foundation, we will establish several concrete pathways forward:

- Immediate Actions: Working groups formed during the session will begin addressing high-priority research gaps identified through our activities. A dedicated Slack workspace and mailing list will maintain momentum amongst participants, with monthly virtual meetings to share progress and coordinate efforts.
- Conference Programme: We have already secured a workshop at IUI 2026 that will build directly on this SIG's findings, moving from problem identification to solution development. We plan to organise follow-on workshops at CHI 2026, DIS 2025, and CSCW 2025, each focusing on specific challenge areas identified during the SIG (e.g., evaluation methods, power dynamics, scaling participation). Community Infrastructure: We aim to establish a Participatory AI research network, potentially as a SIGCHI chapter, to provide ongoing support for researchers and practitioners. This will include a repository of methods and tools, a database of case studies, and regular symposia bringing together academia, industry, and civil society.
- Research Agenda: The prioritised research gaps will inform a collaborative grant proposal for large-scale funding to support multi-site studies on Participatory AI methods. We will also develop a special issue proposal for a relevant journal to consolidate emerging work in this space. Our goal is to transform this SIG from a single gathering into a catalyst for sustained collaboration, ensuring that citizen participation becomes integral to AI development rather than an afterthought. Through coordinated research efforts and shared infrastructure, we aim to democratise AI innovation whilst advancing rigorous methods for meaningful participation.

4 Organisers

The organisers bring together expertise in participatory design, responsible AI, digital civics, and inclusive computing from leading research centres in the UK and Portugal. This interdisciplinary team combines theoretical foundations with practical experience in citizen engagement and AI democratisation.

- **Kyle Montague** is Professor of Human-Computer Interaction at Northumbria University and Research Co-Lead of the Northumbria Centre for Responsible AI. He directs the Northumbria Social Computing (NorSC) research group, focusing on participatory design, digital civics, and inclusive technology development. His work emphasises democratising technology design through community engagement, with recent projects addressing responsible AI in law. *kyle.montague@northu*
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- **Valentina Nisi** is a Professor at the Instituto Superior Técnico, University of Lisbon, Portugal, and Affiliated Faculty at the HCI Institute at Carnegie Mellon. She is a founding member of the Interactive Technologies Institute, LARSyS. Her research engages with post-human theories applied to social and environmental issues, through games and storytelling. *valnisi@andrew.cmu.edu*
- **Nuno Jardim Nunes** is a Full Professor at Técnico – University of Lisbon and the President and founder of the Interactive Technologies Institute (ITI). He is co-director of the Carnegie Mellon International Partnership and adjunct faculty at CMU's Human-Computer Interaction Institute. His research focuses on human-centric design in participatory culture and sustainability, exploring how digital technologies (including ML/AI, interactive storytelling, and mixed reality) can engage citizens to act sustainably. He currently coordinates the Bauhaus of the Seas, a New European Bauhaus lighthouse project. *nunojnunes@tecnico.ulisboa.pt*
- **Hugo Nicolau** is an Associate Professor at the University of Lisbon. He leads a research team on inclusive computing and is Vice-President of ITI/LARSyS research unit. He has served in multiple organising roles in top-tier conferences such as CHI, ASSETS, and DIS. *hugo.nicolau@tecnico.ulisboa.pt*

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