PhD Candidate, Technological University Dublin

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Profile

Researcher specialising in Accessibility and Artificial Intelligence, with experience spanning digital accessibility, human–computer interaction, ethical technology governance, and public-interest technology. My work examines how socio-technical systems shape user experience, access, and equity, particularly for persons with lived experience of disability and marginalised communities. I integrate technical evaluation, participatory design, cultural analysis, and policy-facing research. I have conducted research at TU Dublin, the Center for Accessibility and Inclusion Research (CAIR) at Rochester Institute of Technology, and as part of the Humboldt Residency Programme. I aim to advance inclusive, culturally aware, and equitable AI systems.

Education

Technological University Dublin – *PhD Candidate, Inclusive ML for Digital Accessibility (Expected 2026)*
Focus areas: digital accessibility, AI for social good, participatory design, active inclusion, HCI.

Botswana International University of Science and Technology – *B.E. Mechatronics Engineering (2019)*

Core Competencies

- **Inclusive & Accessible AI:** WCAG, EN 301 549, participatory and human-centred design, responsible AI.
- **AI Governance & Policy:** EU AI Act, Web Accessibility Directive, ethical and accountable AI.
- **Research Methods:** Mixed-methods, qualitative inquiry, technical evaluation, critical analysis.
- **Technical Skills:** Python, R, Jupyter, OpenAI APIs, accessibility testing pipelines.
- **Stakeholder Engagement:** Co-design, lived experience consultation, interdisciplinary collaboration.
- **Science Communication:** Academic writing, public outreach, multimedia knowledge translation.

Professional Experience

Assistant Lecturer, Research Methods — Technological University Dublin *(Present)*

- Teach postgraduate modules on critical literature review, research design, and analytical methodologies.
- Mentor students in designing ethical and inclusive research projects.

AI Researcher & PhD Candidate — Technological University Dublin *(2021–Present)*

- Evaluate ML-driven accessibility tools through technical and user-centred approaches.
- Analyse fairness, transparency, and explainability within AI accessibility frameworks.
- Communicate findings to academic, policy, and industry audiences.

Research Fellow — Humboldt Residency Programme *(2024)*

- Contributed to transdisciplinary inquiry on global inequalities in knowledge production.
- Produced public-facing outputs including *We Don't Talk Anymore* (short film) and *kNOw* (zine on epistemic justice).

Visiting Researcher — CAIR Lab, Rochester Institute of Technology *(2023–2024)*

- Conducted usability and compliance evaluations of AI-driven accessibility overlays for blind and low-vision users.
- Collaborated with accessibility advocates and researchers on policy and design recommendations.

Engineering Intern — United Nations Environment Programme *(2021)*

- Supported research on ethical technology adoption in disaster response and environmental governance.

Research Intern — Stanford School of Engineering (SURF Program) *(2018)*

- Conducted computer vision model evaluation and contributed to reproducible research documentation.

Selected Publications

1. **Makati, T., Tigwell, G., & Shinohara, K. (2024).** *The Promise and Pitfalls of Web Accessibility Overlays for Blind and Low Vision Users.* ACM SIGACCESS Conference on Computers and Accessibility (ASSETS). https://doi.org/10.1145/3663548.3675650
2. **Makati, T. (2025).** *Assessing AI's Role in Digital Accessibility.* In *Beyond Tech Fixes* (Springer). https://doi.org/10.1007/978-3-031-93022-5_7
3. **Makati, T. (2022).** *Machine Learning for Accessible Web Navigation.* Web for All Conference (W4A). https://doi.org/10.1145/3493612.3520463

Selected Talks & Outreach

- ACM FAccT 2025 – *Stakeholders' Perceptions of Active Inclusion for AI Tools Supporting Accessibility*
- IndabaX Botswana – *Introduction to Machine Learning*
- Women Techmakers Southern Africa – *Introduction to AI Design & Development*

Fellowships & Awards

- Humboldt Residency Programme (2024).
- SFI–NSF Dublin–Rochester Mobility Fellowship (2023).
- African Drone and Data Academy Scholarship (2020).
- SURF Fellow, Stanford School of Engineering (2018).

Leadership & Service

- Expertise and Mentorship Director, Women in STEM - International
- Co-organiser, Women in Machine Learning & Data Science (WiMLDS) Gaborone Chapter.
- Director of Research & Innovation, BIUST Alumni Association