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DR. THOMAS REITMAIER

current position

June 2021 – present

Research Officer — Swansea University, *Swansea, UK*

I am a Post Doctoral Research Officer for UnMute, an interdisciplinary, EPSRC funded research project that creates novel, spoken language interaction opportunities with communities of minority language speakers who are currently digitally 'unheard'. I lead on community engagement, co-creation of datasets for, and prototypes leveraging, automatic speech recognition systems.
Collaborators: Future Interaction Technology Lab & Centre for Speech Technology Research

education

2012 – 2018 — UNIVERSITY OF CAPE TOWN — *Cape Town, South Africa*

Ph.D., Computer Science.
Human-Centred Computer Architecture: Redesigning the Mobile Datastore & Sharing Interface
Scholarship: Microsoft Research PhD Scholarship
Supervisors: Professors Edwin Blake, Richard Harper & the late Gary Marsden

2009 – 2011

M.Sc., Computer Science, *awarded with distinction*.
Designing Digital Storytelling for Rural African Communities
Supervisor: Professor Gary Marsden

2008

B.Sc., (Hons), Information Technology, *awarded with first class honours*.
Project: Mobile Digital Stories: A User-Centered Design Project
Supervisor: Professor Gary Marsden

2005 – 2007 — RHEINISCH-WESTFÄLISCHE TECHNISCHE HOCHSCHULE — *Aachen, Germany*

Vordiplom in Computer Science (Informatik)
Minor: Psychology

grants, scholarships, honours, awards, & prizes

2021–2022 — *Morgan Advanced Studies Institute Fellowship*

2021–2022 — *Morgan Advanced Studies Institute – Summit Grant* for GBP30 000.

2013–2018 — *Microsoft Research PhD Scholarship* for GBP35 500.

2015 — *Early Childhood Development Hackathon* ZAR10 000 prize for the most innovative project.

2012 — *S2A3 Master's Medal* finalist for the best M.Sc. degree of the year at UCT.

2012 — *Entelect UCT Computer Science Award* for the best publication [J4] by an M.Sc. student.

previous experience

Aug. 2016 – June 2021

Digital Economy Research Assistant — Swansea University, *Swansea, UK*

Facilitating and supporting applied interdisciplinary research to address pressing societal issues through human-centred digital innovations at the CHERISH Digital Economy Research Centre. I led on the international lablets programme and contributed to 12 projects co-creating novel technologies in diverse settings, including healthcare, online grooming prevention, and heritage.
Collaborators: Professor Matt Jones and the Future Interaction Technology Lab

Jan. – March 2021

Design Consultant — Home Office, *London, UK*

Facilitated engagements with multiple stakeholders and designed visualisation interfaces of big datasets to support iterative exploration across scales and inform stakeholder decision making.

July – Sept. 2014

Research Intern — Microsoft Research, *Cambridge, UK*

Researched and prototyped a mobile datastore – *My Stuff* – that explores more nuanced forms of sharing and new file abstractions that can evolve to represent the social life a file gains when it is shared between people or posted to the cloud, see [T1].
Collaborators: Professor Richard Harper and the Human Experience & Design (HxD) Group

2012

Design Consultant — Meraka Insitute, *Pretoria, South Africa*

Co-designed and implemented two iterations of an asynchronous audio repository and sharing

system – *Our Voices* – to support communication between and within villages in a close-knit, rural, South African community, see [C15].
Collaborators: Professor Nicola Bidwell and the Mankosi Community

Research Intern Microsoft Research, *Cambridge, UK*
May – July 2010
Researched and prototyped new mobile experiences to support co-present interaction and media exchange among groups of people, see [C13].
Collaborators: Professor Richard Harper and the Computer Mediated Living (CML) Group

Research Intern Nokia Research Africa, *Nairobi, Kenya*
Jan – Feb 2009
Prototyped a mobile peer-to-peer (P2P) music distribution service to support the informal music industry of urban Kenyan slums. *Mentor*: Jussi Impiö

publications & presentations

conference papers

[C1] **Reitmaier, T.,** E. Wallington, O. Klejch, N. Markl, L.-M. Lam-Yee-Mui, J. Pearson, M. Jones, P. Bell, & S. Robinson. 2023. "Situating Automatic Speech Recognition Development within Communities of Under-heard Language Speakers." In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems: CHI '23*. New York, NY, USA: Association for Computing Machinery, April 23, 2023. DOI: 10.1145/3491102.3517639

[C2] Markl, N., P. Bell, E. Wallington, O. Klejch, S. Robinson, **T. Reitmaier,** M. Jones, & J. Pearson. 2023. "Speech Technologies Development with and for Minority Language Communities: Case Study of Isixhosa." In *Proceedings of the 2023 International Conference on Minority Languages: ICML 2023*. Wales, UK, June 20, 2023

[C3] Pearson, J., G. Bailey, S. Robinson, M. Jones, T. Owen, C. Zhang, **T. Reitmaier,** C. Steer, A. Carter, D. R. Sahoo, & D. K. Raju. 2022. "Can't Touch This: Rethinking Public Technology in a COVID-19 Era." In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems: CHI '22,* 1–14. New York, NY, USA: Association for Computing Machinery, April 29, 2022. DOI: 10.1145/3491102.3501980

[C4] **Reitmaier, T.,** E. Wallington, D. Kalarikalayil Raju, O. Klejch, J. Pearson, M. Jones, P. Bell, & S. Robinson. 2022. "Opportunities and Challenges of Automatic Speech Recognition Systems for Low-Resource Language Speakers." In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems: CHI '22,* 1–17. New York, NY, USA: Association for Computing Machinery, April 29, 2022. DOI: 10.1145/3491102.3517639

[C5] Seunarine, K., D. Kalarikalayil Raju, G. Thomas, S. K. Thomas, A. Pockett, **T. Reitmaier,** C. Steer, T. Owen, Y. K. Meena, S. Robinson, J. Pearson, M. Carnie, D. R. Sahoo, & M. Jones. 2022. "Light-In-Light-Out (Li-Lo) Displays: Harvesting and Manipulating Light to Provide Novel Forms of Communication." In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems: CHI '22,* 1–15. New York, NY, USA: Association for Computing Machinery, April 28, 2022. DOI: 10.1145/3491102.3517730

[C6] Raju, D. K., K. Seunarine, **T. Reitmaier,** G. Thomas, Y. K. Meena, C. Zhang, A. Pockett, J. Pearson, S. Robinson, M. Carnie, D. R. Sahoo, & M. Jones. 2021. "PV-Pix: Slum Community Co-Design of Self-Powered Deformable Smart Messaging Materials." In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems: CHI '21,* 1–14. New York, NY, USA: ACM. DOI: 10.1145/3411764.3445661

[C7] **Reitmaier, T.,** S. Robinson, J. Pearson, D. K. Raju, & M. Jones. 2020. "An Honest Conversation: Transparently Combining Machine and Human Speech Assistance in Public Spaces." In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems: CHI '20,* 183:1–183:12. New York, NY, USA: ACM. DOI: 10.1145/3313831.3376310

[C8] Pearson, J., S. Robinson, **T. Reitmaier,** M. Jones, S. Ahire, A. Joshi, D. Sahoo, N. Maravi, & B. Bhikne. 2019. "StreetWise: Smart Speakers vs Human Help in Public Slum Settings." In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems - CHI '19,* 1–13. The 2019 CHI Conference. Glasgow, Scotland Uk: ACM Press. DOI: 10.1145/3290605.3300326

[C9] Robinson, S., J. Pearson, **T. Reitmaier,** S. Ahire, & M. Jones. 2018. "Make Yourself at Phone: Reimagining Mobile Interaction Architectures With Emergent Users." In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems: CHI '18,* 1–12. New York, NY, USA: Association for Computing Machinery, April 21, 2018. doi: 10.1145/3173574.3173981

[C10] Ssozi-Mugarura, F., **T. Reitmaier,** A. Venter, & E. Blake. 2016. "Enough with 'In-The-Wild'." In *Proceedings of the First African Conference on Human Computer Interaction: AfriCHI'16,* 182–186. New York, NY, USA: ACM. doi: 10.1145/2998581.2998601

[C11] Bidwell, N. J., S. Robinson, E. Vartiainen, M. Jones, M. J. Siya, **T. Reitmaier,** G. Marsden, & M. Lalmas. 2014. "Designing Social Media for Community Information Sharing in Rural South Africa." In *Proceedings of the Southern African Institute for Computer Scientists and Information Technologists Annual Conference: SAICSIT '14,* 104–114. New York, NY, USA: ACM. doi: 10.1145/2664591.2664615

[C12] Bidwell, N. J., **T. Reitmaier,** & K. Jampo. 2014. "Orality, Gender and Social Audio in Rural Africa." In *Proceedings of the 11th International Conference on the Design of Cooperative Systems: COOP'14,* edited by Rossitto, C., Ciolfi, L., Martin, D., & Conein, B., 225–241. Springer. doi: 10.1007/978-3-319-06498-7_14

[C13] **Reitmaier, T.,** P. Benz, & G. Marsden. 2013. "Designing and Theorizing Co-Located Interactions." In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems: CHI '13,* 381–390. New York, NY, USA: ACM. doi: 10.1145/2470654.2470709

[C14] Bidwell, N. J., **T. Reitmaier,** C. Rey-Moreno, Z. Roro, M. J. Siya, & B. Dlutu. 2013. "Timely Relations in Rural Africa." In *Proceedings of the 12th International Conference on Social Implications of Computers in Developing Countries: IFIP WG 9.4,* 92–107

[C15] **Reitmaier, T.,** N. J. Bidwell, M. Siya, G. Marsden, & W. D. Tucker. 2012. "Communicating in Designing an Oral Repository for Rural African Villages." In *Proceedings of IST-Africa: Regional Impact of Information Society Technologies in Africa: IST-Africa '12.* Dar es Salem, Tanzania

[C16] **Reitmaier, T.** 2011. "'She Looked Deep into Our Eyes:' Reflections on Cross-Cultural Practice." In *Proceedings of the Indigenous Knowledge Technology Conference: Embracing Indigenous Knowledge Systems in a New Technology Design Paradigm: IKTC '11,* edited by Bidwell, N. J. & Winschiers-Theophilus, H., 100–107. Windhoek, Namibia

[C17] **Reitmaier, T.,** N. J. Bidwell, & G. Marsden. 2010. "Field Testing Mobile Digital Storytelling Software in Rural Kenya." In *Proceedings of the 12th International Conference on Human Computer Interaction with Mobile Devices and Services: MobileHCI '10,* 283–286. New York, NY, USA: ACM. doi: 10.1145/1851600.1851649

[C18] Bidwell, N. J., **T. Reitmaier,** G. Marsden, & S. Hansen. 2010. "Designing with Mobile Digital Storytelling in Rural Africa." In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems: CHI '10,* 1593–1602. New York, NY, USA: ACM. doi: 10.1145/1753326.1753564

[C19] Marsden, G., I. Ladeira, **T. Reitmaier,** N. J. Bidwell, & E. Blake. 2010. "Providing a Digital Voice for Storytellers in Africa." In *Kultur Und Informatik: Interaktive Systeme,* edited by Sieck, J., 101–132. Boizenburg, Germany: Verlag Werner Hülsbusch

[C20] **Reitmaier, T.,** & G. Marsden. 2009. "Bringing Digital Storytelling to the Mobile." In *Human-Computer Interaction – INTERACT 2009: Lecture Notes in Computer Science,* 750–753. 5726. Berlin / Heidelberg: Springer. doi: 10.1007/978-3-642-03655-2_81

journal articles

[J1] Price, M., S. Higgs, L. Wilkinson, M. Lee, R. Embling, P. Kuberka, A. Hamill, J. Collier, S. Keable-Steer, **T. Reitmaier,** S. Mukhopadhyay, & S. Lindsay. 2020. "Construal Beliefs Moderate the Usability and Effectiveness of a Novel Healthy Eating Mobile App." *Physiology & Behavior* 222:112941. doi: 10.1016/j.physbeh.2020.112941

[J2] Pearson, J., S. Robinson, **T. Reitmaier,** M. Jones, & A. Joshi. 2019. "Diversifying Future-Making Through Itinerative Design." *ACM Transactions on Computer-Human Interaction* 26 (5): 33:1–33:21. doi: 10.1145/3341727

[J3] **Reitmaier, T.** 2012. "'She Looked Deep Into Our Eyes': Reflections on Cross-Cultural Practice in Rural Africa." *Knowledge Management for Development Journal* 7 (3): 327–339. DOI: 10.1080/19474199.2011.649011

[J4] **Reitmaier, T.,** N. J. Bidwell, & G. Marsden. 2011. "Situating Digital Storytelling Within African Communities." *International Journal of Human-Computer Studies* 69 (10): 658–668. DOI: 10.1016/j.ijhcs.2010.12.008

[J5] Marsden, G., I. Ladiera, **T. Reitmaier,** N. J. Bidwell, & E. Blake. 2010. "Digital Storytelling in Africa." *International Journal of Computing* 9 (3): 257–265

magazine articles & case studies

[M1] Scott, A., **T. Reitmaier,** M. Jones, & Y. Rogers. 2021. "Mind the Gap: How Good Are We at Keeping Our Distance?" *interactions* 28 (4): 44–49. DOI: 10.1145/3469123

[M2] Pearson, J., S. Robinson, **T. Reitmaier,** M. Jones, A. Joshi, C. Parab, F. O. Mogoi, & S. Jenson. 2017. "Exploring the Use of the Physical Web with Resource-Constrained Communities." In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems: CHI EA '17*, 1117–1125. New York, NY, USA: ACM. DOI: 10.1145/3027063.3053349

theses

[T1] **Reitmaier, T.** 2018. "Human-Centred Computer Architecture: Redesigning the Mobile Datastore & Sharing Interface." PhD diss., University of Cape Town

[T2] **Reitmaier, T.** 2011. "Designing Digital Storytelling for Rural African Communities." Master's thesis, Department of Computer Science, University of Cape Town

workshops organized

[W1] Suleman, H., M. Densmore, **T. Reitmaier**, et al. 2015. Towards a Strategic Agenda for Local Research in ICT for Development. Workshop at the *Southern African Institute for Computer Scientists and Information Technologists Annual Conference: SAICSIT '15*. Stellenbosch, South Africa, September 28

[W2] Hussen, T. S. & **T. Reitmaier**. 2015. Cape Town Satellite Workshop to the Researching for Change in a Globalising Asymmetric World Workshop at the *Critical Alternatives: 5th Decennial Aarhus Conference*, organized by Blake, E., I. Büskens, & A. Dearden. Cape Town, South Africa, August 18

workshop papers

[W3] **Reitmaier, T.** 2013. "Dissolving Differences in Conceptions of Time: Lessons from ICT4D Research." In *Changing Perspectives of Time Workshop at CHI 2013*. Paris, France, April 25, 2013

[W4] **Reitmaier, T.** 2013. "Refiguring the Natural in Natural User Interfaces." In *Proceedings of the 13th IFIP TC 13 International Conference on Human-Computer Interactions: INTERACT '13*. Cape Town, South Africa: Doctoral Consortium, September 3, 2013

panels

[P1] Walton, M., N. J. Bidwell, A. Venter, **T. Reitmaier**. 2014. "Mobile Technologies and Society in South Africa: Towards Transdisciplinary Perspectives on Mobile Social Media", Panel Discussion at the *South African Communications Association 40th Annual Conference: SACOMM '14*, Potchefstroom, South Africa, October 1

posters

[P2] "Redesigning the Mobile Sharing Interface", *9th Microsoft Research PhD Summer School*, Cambridge, UK, July 1st, 2014

[P3] "Taking Back our Digital Possessions: Redesigning the Mobile Datastore and Sharing Interface", *University of Cape Town Computer Science Open Evening*, November 13, 2014

[P4] "Refiguring the Natural in Natural User Interfaces", poster presented at the *13th IFIP TC 13 International Conference on Human-Computer Interactions: INTERACT '13*, Cape Town, South Africa, September 4, 2013

invited talks

[I1] "Side By Side/Ochr Wrth Ochr – Delivering art-based interventions in care-home settings through digital innovation", *The Swansea Wellbeing Symposium*, Swansea, Wales, July 16, 2021

[12] "An Honest Conversation: Transparently Combining Machine and Human Speech Assistance in Public Spaces", *IDC School of Design, Indian Institute of Technology Bombay*, Mumbai, India, May 1st, 2020.

[13] "(Not) Designed in California: Engaging Emergent-Users in the Design of Future Energy Services", *Centre for Energy Science, Indian Institute of Science Education and Research*, Pune, India, April, 2019

[14] "Making with Meaning: Exploring the Benefits of Makerspaces for People Living with Brain Injury", *Brain Injury Service Open Day, Morriston Hospital*, May 9, 2018

[15] "Making with Meaning: Exploring the Benefits of Makerspaces for People Living with Brain Injury", *South West Wales Brain Injury Group Conference*, Swansea, Wales, May 12, 2017

[16] "New File Abstractions and Grammars of Interaction for the Mobile Datastore", *UCT Seminar Series on ICT4D Research, University of Cape Town*, October 18, 2014.

[17] "Redesigning the Mobile Datastore and Sharing Interface", *Human Experience and Design (HxD) Group, Microsoft Research Cambridge UK*, September 22, 2014.

[18] "An Academic Writing Workflow using Emacs, Zotero, pandoc, and BibLaTeX", *UCT Seminar Series on ICT4D Research, University of Cape Town*, April 2, 2014.

supervising, teaching, & tutoring

students supervised

Zola Mahlaza & **Jarvis Mutakha** (April 2014 – November 2014)
Supervised Zola & Jarvis' Honours research project on creating novel co-located mobile media experiences using Android phones and a Raspberry Pi Wifi Access Point.

guest lectures

Machine Learning Summer School 2023: "Speech interactions designed and developed using human-centred machine learning approaches". Gordon's Bay, South Africa, January 19th 2023.

IIT Bombay Interaction Design Research Methods: Community-engaged Automatic Speech Recognition Development for Under-heard Language Speakers. Lecture on *Research methods for community engagement and ASR development*, January 9th, 2023.

Swansea CSC200: Designing Renewable Energy Interfaces with Rural Rwandan Communities. Lecture on *Co-design Methods and Energy Interfaces*, April 23rd, 2021.

Swansea CSC301: Designing Renewable Energy Interfaces with Rural Rwandan Communities. Lecture on *Co-design Methods and Energy Interfaces*, 2019.

Swansea CSC306: Reactive Android Programming with RxJava2. Lecture on *Functional Reactive Mobile Application Development*, 2018.

Swansea CSC306: Reactive Android Programming with RxJava2. Lecture on *Functional Reactive Mobile Application Development*, 2017.

UCT CSC4000W: Computer Networks for Developing Regions. Lecture on *Co-Located Sharing Architectures*, 2015.

UCT CSC1016S: Computer Programming, Professionalism, & Ethics. Lecture on *Information & Communication Technologies for Development ICT4D*, 2013.

UCT CSC2002S: Mobile Application Development. Lecture on *Introduction to Mobile App Development on Android using the Eclipse IDE*, 2013.

UCT CSC1016S: Computer Programming, Professionalism, & Ethics. Lecture on *Information & Communication Technologies for Development ICT4D*, 2012.

tutor

UCT CSC2002S: Mobile Application Development. Tutor overseeing lab practicals on *Android Programming*, 2013.

academic service

chairing

SIGCHI Across Borders Initiative 2018 Local-Chair
Collaborated with Dr. Susan Dray (SIGCHI VP) to broaden participation in ACM SIGCHI.

MobileHCI 2017 Late Breaking Work Co-Chair
Poster track of MobileHCI 2017.

AfriCHI 2016 Gumzo Track Co-Chair
The Gumzo track seeks to broaden participation and open new dialogues for HCI in Africa through Multimedia and Oral Presentations as well as written contributions.

Interact 2013 Student Volunteer Co-Chair
Responsible for 20 student volunteers.

volunteering

ICTD 2013 Student Volunteer & Local Research Showcase Co-organizer
Responsible for the local research showcase where over local 50 students and NGOs showcased their work.

reviewing

Human Factors in Computing Systems Conference CHI 2014 – 2016 & 2018 – 2023

ACM SIGCHI Symposium on Engineering Interactive Computer Systems EICS 2023

Computer-Supported Cooperative Work CSCW 2022

Transactions on Computer-Human Interaction 2022

Mobile and Ubiquitous Media Conference MUM 2015

Designing Interactive Systems Conference DIS 2012, 2014

Mobile Human Computer Interactions Conference MobileHCI 2012, 2013

IEEE Pervasive Computing Journal 2013

Human-Computer Interaction Journal (Special Issue on Transnational HCI) 2012

Indigenous Knowledge Technology Conference IKTC 2011

memberships

Association for Computing Machinery (ACM)
ACM Special Interest Group in Human-Computer Interaction (ACM SIGCHI)

community service

2014 – 2016

Graduate Student Coordinator, UCT ICT4D Centre, Department of Computer Science
Official elected liaison between ICT4D Centre staff and graduate students.

2015

Creative Coders Tutor, Ikamva Youth, Khayelitsha
Teaching secondary school students from the Khayelitsha Township basic programming, graphic, and animation concepts using Processing and JavaScript on PCs and Tablets.

personal data

languages

English (native fluency), German (native fluency), French (basic)

nationalities

USA, Germany (with UK settled status)

computer & programming expertise

Operating Systems: Mac OS X, Windows, Linux

Programming Languages: Kotlin, Java, C#, JavaScript, Python, F#, C++.

Mobile App Development: Android

Embedded Computing: Raspberry Pi, Arduino

Editors / IDEs: Emacs, Vim / Visual Studio, Android Studio, IntelliJ

Cloud Environments / Technologies: Azure App Services & Storage, Amazon Web Services EC2 & S3 / docker, traefik

Web / Networking: nginx, ktor, node.js, ASP.NET / iptables, SSH

Databases: PostgreSQL, SQLite, MYSQL, CouchDB, MongoDB, Linq, JSON, XML

Version Control: git

Graphics / Publishing: Inkskape, GIMP / inDesign

Office: Microsoft Office, LaTeX