

AI & IKS WORKSHOP



THE AFRICAN CENTRE
FOR EPISTEMOLOGY AND
PHILOSOPHY OF SCIENCE

BOOK OF ABSTRACTS

26 November 2024
African Centre for Epistemology and Philosophy of Science
11th Floor Boardroom @ UJ on Empire
University of Johannesburg

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AI&IKS WORKSHOP

In the context of Indigenous knowledge systems and artificial intelligence (AI), artificial intelligence has the ability to reshape how we understand and engage with knowledge across different domains. As knowledge-making technology, AI must expand the boundaries of knowledge to include and respect Indigenous knowledge systems if it is to develop into a fair and equitable knowledge-making technology and field of research. Ignoring rich and diverse knowledge traditions not only hinders the decolonisation of AI, but moreover, without integrating Indigenous ways of knowing, the epistemological frameworks that guide AI development will remain incomplete and inadequate to address the complex ethical, social, and cultural dimensions that these technologies increasingly impact.

The aim of this workshop, then, is to interrogate the possibilities and limitations of the intersection of these two fields. AI technology can negatively impact Indigenous knowledge systems by leading to the erosion of cultural knowledge, especially when Indigenous information is digitised and disseminated without proper context or consent, risking misappropriation by non-Indigenous groups. It can also result in Indigenous persons' loss of ownership and control of their own knowledge systems, as AI systems developed by institutions in the Global North may commodify Indigenous knowledge without proper collaboration. Data extraction is another concern, where AI's reliance on large datasets, including Indigenous knowledge, can reinforce colonial patterns of extraction and exploitation. Additionally, AI systems trained on biased data can perpetuate harmful stereotypes about Indigenous peoples. However, Indigenous knowledge systems can significantly enhance AI development by bringing ethical and contextual sensitivity rooted in holistic worldviews. Their local and contextual expertise can contribute to solving real-world problems, such as environmental and resource management (as exemplified by recent work done by the Social Sciences and Humanities Research Council). Furthermore, incorporating Indigenous knowledge can lead to more inclusive AI systems that respect diverse worldviews, thus helping to train systems that could lead to more inclusive as opposed to biased outputs.

The Workshop is funded by the National Institute for the Humanities and Social Sciences (NIHSS) Philosophy through Indigenous Knowledge in the Global South grant.

Organisers:

Veli Mitova is a Professor of Philosophy and the director of the African Centre of Epistemology and Philosophy of Science (ACEPS) at the University of Johannesburg. Paige Benton is a Doctor of Philosophy and a Postdoctoral Researcher at the African Centre for Epistemology and Philosophy of Science (ACEPS). Dimpho Moletsane is a PhD candidate and Research Assistant at the African Centre for Epistemology and Philosophy of Science (ACEPS) at the University of Johannesburg.

WORKSHOP PROGRAMME

SAST (UTC+2)	Presenter	Title
09:00 - 09:15	Mme Joyce Dipale & Mme Elizabeth More	A Welcome from Our Elders
09:15 - 10:15	Angie Abdilla <i>Australian National University's School of Cybernetics</i>	Meditation on Country
10:20 - 11:15	Nasreen Watson <i>University of Johannesburg</i>	A Meta-Ethical Study: Critiquing Cross-Cultural Ethics in Artificial Intelligence In Education (AIED)
11:15 - 11:30	Break	
11:30 - 12:25	Lena Wang <i>University of Cambridge</i>	Conceptual Engineering in AI and Indigenous Knowledge Elimination
14:25 - 15:20	Iginio Gagliardone & Tshepang Molale <i>University of Witswatersrand</i>	Linking Data Sovereignty, African Indigenous Knowledge Systems and Participatory Communication: A Complex Relationship
13:25 - 14:25	Lunch	
14:25 - 15:20	Harry Wilson Kapatika <i>ACEPS - University of Johannesburg</i>	IKS Hermeneutics as a Restorative Response to Epistemicide within Metacolonialism
15:25 - 16:20	Smangaliso Mkhuma <i>University of Witswatersrand</i>	On The Use of Indigenous languages in AI Systems
16:20- 16:35	Break	
16:35 - 17:30	Rodrigo Bragio Bonaldo <i>Federal University of Santa Catarina</i>	Against the Linear Algebra Industry: Notes on AI's Philosophy of History

PRESENTER BIOGRAPHIES



Angie Abdilla

Australian National University

Angie Abdilla (palawa) is the founder and director of Old Ways, New and a Professor at the School of Cybernetics at the Australian National University. In her various roles as a strategic designer, creative practitioner, and consultant, Angie advocates for Indigenous peoples, knowledges, and knowledge systems as foundational to technology automation through design and cultural practice. She created the company's strategic design methodology, Country Centered Design, to support this work, honing the cultural requirements of projects for the public and private

sectors. Her published research interrogates the praxis of Indigenous deep-time technologies and Artificial Intelligence, informed by the Indigenous Protocols and AI working group (IP//AI), which she founded in 2017. As a creative practitioner, her research extends into film and video installation as an exhibiting artist, with her latest work launching at the Museum of Contemporary Art (MCA) in 2025. As a leading expert, Angie continues to advise on the safety of AI, internationally and locally.



Rodrigo Bragio Bonaldo

Federal University of Santa Catarina

Rodrigo Bragio Bonaldo is a Professor of Theory of History at the Federal University of Santa Catarina (UFSC), Brazil. His research spans conceptual history, the phenomenology of time, public history, the critique of technology, and the exploration of historical thought beyond conventional disciplinary boundaries. He co-founded the "Theory of History on Wikipedia" project, which focuses on creating and revising entries for the

Portuguese-language platform. More recently, he established the AI & History research group, dedicated to training machine learning models for natural language processing (NLP) to study semantic shifts in foundational political and social concepts. His work also aims to develop practical expertise in machine learning, fostering a critique of algorithmic reasoning that remains closely connected to the trajectory of technological development.



Iginio Gagliardone

University of Witswatersrand

Iginio Gagliardone is Professor of Media Studies at Wits University in Johannesburg, South Africa. He is the author of “The Politics of Technology in Africa” (2016) and “China, Africa, and the Future of the Internet” (2019). His most recent work examines the international politics of Artificial Intelligence and the emergence of new imageries of technological evolution in Africa.



Harry Wilson Kapatika

ACEPS - University of Johannesburg

Harry Wilson Kapatika is a doctoral candidate at the University of Johannesburg’s Philosophy Department. His MA thesis undertaken at the University of the Western Cape, provided a novel account of the notion of epistemicide. His philosophical interests include African philosophy, African epistemology, Indigenous Knowledge Systems, the African history of ideas and philosophical artefacts. His other related academic interests are in the broad field of the Humanities and the application of its multi-disciplinary approach to pedagogy and theorisation in the African context, comparative philosophy and African history. He is currently a research fellow at the African Centre for Epistemology and Philosophy of Science where he is undertaking his doctoral research. He is a former research fellow at the Centre of Humanities Research.



Smangaliso Mkhuma

University of Witwatersrand

Smangaliso Mkhuma, (MPhil), is a graduate of the University of the Witwatersrand, under the supervision of Dr. A. D. Attoe, where he was working on African Conception(s) of Intelligence. He is also a member of the Black Intellectual Praxes (BIP), which is a contemporary intellectual collective in Azania/ South Africa. He is the BIP Community Programs director, BIP Online Newsletter webmaster, and theorist.

His research interests include African Philosophy, Ethics, Ethics of AI and Machine Learning, Social & Political Philosophy, Metaphysics, and Decolonial Thought.



Lena Wang

University of Cambridge

Lena Wang is a PhD student in Philosophy at St Catharine's College, Cambridge University. She is undertaking research in social epistemology, social and political philosophy, and the philosophy of technology. Her thesis investigates how technological systems interact with hierarchies of power to warp our epistemic environment, and the epistemic injustices that result.



Nasreen Watson

University of Johannesburg

I am currently pursuing a Master's degree in Responsible Artificial Intelligence Ethics in Higher Education, building on a foundation of both corporate and academic experience. My career began at Standard Bank (South Africa), where I developed key leadership and technical skills that inspired me to complete a degree in Human Resource Management, achieving 23 distinctions. Following this, my passion for critical thinking led me to

Philosophy, where I graduated with Honours with Distinction. I now serve as an Academic Writing Consultant at the University of Johannesburg's Academic Development Centre, applying my expertise to support students in developing their academic and professional skills.

PRESENTATION ABSTRACTS

Angie Abdilla

Meditation on Country

This talk will explore the cultural and conceptual underpinning of the installation artwork, *Meditation on Country* utilising an array of Machine Learning models to fuse space and earth data visualisations, and sonification that interrogates technology as cultural practice. The talk will explore how the artwork examines the role of resonance, language, and story within the context of evolution and Creation. When knowledge is in the muscle, it is embodiment, becoming part of the belief system. This is the power of an oral and performative culture. *Meditation on Country* was born from over 7 years of research initiated by the Indigenous Protocols for AI (IP//AI) co-founded by Angie Abdilla as the Director of Old Ways, New with two First Nations scholars, in 2018. The international network has produced a body of research and a series of workshops supporting the next generation of First Nations technologists.

Rodrigo Bonaldo

Against the Linear Algebra Industry: Notes on AI's Philosophy of History

Building on a prior thought experiment designed to explore alternative ways of relating to a more-than-human reality, this presentation sheds light on a form of historical rationality set in motion by the big tech complex. This rationality is framed as neutral, objective, and scientific. In contrast, I argue that it is rooted in a specific chronopolitics that we call the modern concept of history—a set of practices aimed at synchronizing multiple temporalities into a single directionality, pointing toward a future stripped of experiential depth. This future of pure expectation is envisioned as a repetition of patterns recognized in historical data, and as a result, it becomes a mechanism for reproducing historical and social differences. This is what I term necessary computation, which I claim once again reinforces the belief in History with a capital H.

In opposition to this, I revisit non-Western traditions of reasoning to explore the possibilities of a contingent computation, revisiting Alan Turing's famous provocation to ask

if a computer can indeed "think" something new. Nevertheless, my core contention is that our relationship to AI is more-than-human, not solely because Amerindian perspectivism might guide us in that direction, but precisely because we input human values into machines through data curation, prior elicitation, supervised and reinforcement learning from human feedback.

In closing, the question is not only whether a computer can "think" something new but whether our approach to AI can allow for new histories and futures to emerge. If we recognize AI as more-than-human, infused with human values, we can expand its capacity beyond mere replication of established patterns. By rethinking the concept of computation itself, from "necessary" to "contingent," we open up possibilities for a politics of historical times that embraces diverse temporalities and open horizons of expectation. Such an approach invites us to envision human-machine interactions for cultivating alternative pasts and futures, unbound by the limits of History with a capital H. In this way, AI development could act as a catalyst for genuine novelty and creativity in historical understanding, helping us to imagine futures that are rich in multiplicity and experience—futures that, like Turing's provocation, challenge the familiar and make space for the unexpected.

Iginio Gagliardone

Linking Data Sovereignty, African Indigenous Knowledge Systems and Participatory Communication: A Complex Relationship

Who should have access to, and make use of, the data that are produced within specific jurisdictions? Interest in the localisation and accessibility of data are rooted in a combination of economic and cultural factors. On the one hand, it is the result of the increasing awareness of the value that can be derived from accessing large amount of data, and of the anger towards tech giants' extractive practices, syphoning data away from the communities where it is produced while preventing the same communities from accessing it in pursuit of their own goals. On the other hand, it is motivated by the aspiration by national and supra-national institutions to inscribe rights and values considered fundamental in their jurisdictions in the mechanisms guiding how public and personal data are handled and utilised. At the heart of this problem, is the theoretical misconception behind what participation, dialogue, and empowerment mean for different role players. The strategic importance of generative AI and the exponential proliferation of its applications have given an all-new meaning to these claims of data sovereignty and accessibility. This paper explores the relationship between data sovereignty and the possibility of accessing training data to develop solutions that are better aligned with different communities' needs and values, including relying on and making indigenous knowledge systems more visible, locally and internationally. It examines South Africa's approach towards different forms of data sovereignty (including the National Policy on Data and Cloud issued in August 2024) and compares it with other international experiences, especially in the Global South. Its aim is

examining the trade-offs between more assertive national approaches, resisting Big Tech's claims and practices presenting the unsanctioned access of data as a necessity to generate disruptive and globally beneficial innovations, and transnational approaches that can pool a plurality interests and resources to protect and enhance different forms of indigenous knowledge.

Harry Wilson Kapatika

IKS Hermeneutics as a Restorative Response to Epistemicide within Metacolonialism

Unequal global relations reflected in the epistemic currents of the 21st century suggests that epistemicide is best framed, in this era, by the notion of 'metacolonialism' and 'metacolonicity'. This is most evident regarding the case of Indigenous Knowledge Systems (IKS). In this presentation, I argue that metacolonialism accurately characterises the contemporary epistemic state of Global South contexts like Africa. In assessing the continent as a site of epistemic production, amid instances of epistemicide, I argue that the new developments of coloniality are yet to be seriously addressed. Thus, the dangers of the Fourth Industrial Revolution (4IR), artificial intelligence (AI), algorithmic racism and bias as well as data colonialism oppressing formerly colonised peoples will be taken to be manifestations of metacolonialism. If we take IKS to be both marginalised and a systemically oppressed knowledge system, it stands little chance against these digitised and abstracted forms of oppression. For example, databases, search engines and online repositories facilitate the erasure of knowledge systems simultaneously eroding the epistemic status and credibility of IKS experts and their outputs. Each instance of metacolonialism has detrimental and terminal consequences for marginalised knowers and IKS on the continent, I argue. Metacolonialism thus adds an additional layer of oppressive colonialism that will inevitably need to be decolonised. As part of the positive programme of this essay, I forward a solution to assist in mitigating and undoing metacolonialism's effects by employing two hermeneutical tools drawn from IKS. The first tool drawn is the radical ubuntu ethos of the amaqaba, which unequivocally rejects assimilative integration as an act of defiance against (meta)coloniality. The second tool is found in indigenous acts of appropriation as decolonisation, drawing up what the Bakongo call the 'Kalûnga Line', in order to humanely manage new technologies and mitigate their potential for erasure of IKS and its episteme.

Smangaliso Mkhuma

On The Use of Indigenous Languages in AI Systems

The paper seeks to investigate the implications of developing AI (Artificial Intelligence) systems through indigenous languages. The claim is that the construction of AI systems that

are representational and faithful to the African context must begin with the exposition of indigenous languages to enable them to facilitate the construction of AI systems, in this way, indigenous languages (as part of indigenous knowledge systems) can be employed to preserve and/or encourage the use of indigenous knowledge systems in AI systems. This claim emerges from the consideration that, within every language, there are building blocks that carry semantic and syntactic value, such that there is a formal logic that is embedded in each language. In the case of languages of the same (or similar) descent, such as the Bantu languages for example, the rules of logic that emerge are found to be similar if not the same. If, indeed, it is the case that the construction of AI systems uses rules of logic (among other things) as its basis, then it follows that the development of AI systems in this way is one of the primary, if not fundamental, approaches that can be employed to preserve and/or encourage the use of indigenous knowledge systems. If AI systems are constructed using the formal logic systems that emerge from indigenous languages, then AI systems are far more likely to carry the capacity of understanding, translating, and transmitting indigenous knowledge systems and phenomena. What is most attractive is that the understanding, translating, and transmitting will be done on the basis and terms of the indigenous knowledge systems whose language will have been used to develop these AI systems.

Lena Wang

Conceptual Engineering in AI and Indigenous Knowledge Elimination

The field of conceptual engineering seeks to assess and revise the concepts that we have, with the aim of addressing any defects in our existing concepts. We might expect that any agent capable of assessment and revision is capable of conceptual engineering, and that conceptual engineers are focused on modifying concepts in beneficial ways. For example, Haslanger (2000) sought to ameliorate the definition and therefore extension of the concepts of WOMAN and MAN in the service of unmasking and addressing gendered oppression.

This talk proposes that AI systems are agents capable of conceptual engineering, and that these systems engineer in ways that are detrimental, rather than beneficial. This might seem surprising to some, as AI systems do not appear to intentionally and independently revise concepts. Indeed, the very harm that AI poses to Indigenous communities is purportedly because they reflect the “epistemic and ontological realities” of their typically non-Indigenous programmers (Walter and Kukutai, 2018, p. 3). However, on my interpretation of the mechanisms of supervised deep learning algorithms, they do not merely reuse the concepts of their creators, but revise them in an act of conceptual engineering. These AI-created concepts prove defective particularly when attempting to represent Indigenous knowledge systems and Indigenous lives. Drawing from scholarship in Indigenous Data Sovereignty, I discuss on how these AI-generated concepts can override community-developed concepts of family and identity. This erasure of knowledge by AI is

one facet of settler-colonialism's logic of elimination. I consider potential correctives and demonstrate why they are unsuccessful in enabling AI to engineer non-defective concepts.

My presentation seeks to highlight that conceptual engineering is not merely a methodology, but a practice that can be undertaken by non-human agents. Attending to how AI performs conceptual engineering clarifies that AI does not merely reflect settler-colonial concepts, but creates them, and how it plays a role in erasing Indigenous knowledge systems.

References

- Haslanger, S. (2000). Gender and Race: (What) Are They? (What) Do We Want Them to Be? *Noûs*, 34(1), 31–55. <https://doi.org/10.1111/0029-4624.00201>.
- Walter, M and Kukutai, T (2018). Artificial Intelligence and Indigenous Data Sovereignty. Input paper for the Horizon Scanning Project “The Effective and Ethical Development of Artificial Intelligence: An Opportunity to Improve Our Wellbeing” on behalf of the Australian Council of Learned Academies, www.acola.org.

Nasreen Watson

A Meta-Ethical Study: Critiquing Cross-Cultural Ethics in Artificial Intelligence in Education (AIED)

This research essay examines the meta-ethical tensions between African and Western frameworks within the context of Artificial Intelligence in Education (AIED). I analyse how Ubuntu, rooted in African culture, encompasses values such as communalism and interconnectedness shares similarities with Western principles such as utilitarianism and humanism. Penny Enslin and Kai Horsthemke (2004) argue that African democracy and citizenship education, underpinned by Ubuntu, share similarities with Western democratic models; yet tensions persist when these frameworks are applied to AI in Education. However, challenges persist in developing and deploying AIED, particularly in establishing effective ethical frameworks to support first-year university students. Through my analysis, I aim to demonstrate that neither framework is sufficient for the implementation and development of AI systems in education. Therefore, this research critically examines whether Ubuntu can effectively address the ethical challenges faced by first-year university students in AIED. Through an expanded critique of Enslin and Horsthemke, this paper addresses the central question: What tensions persist in the practical application of AIED within a cross-cultural ethical framework? Drawing upon the arguments of various scholars, I argue that while Ubuntu presents a distinct and promising framework for addressing social and ethical challenges, it falls short of providing practical solutions for the application of marginalised students. This focus may ultimately hinder the advancement of African

educational institutions in adopting and implementing a global standard of partnership that could enhance student development. My perspective echoes the views of Shannon Vallor (2016, 2018), who argues that cross-cultural ethics, particularly in her assertion of 'technomoral' virtues, offers an approach to addressing the rapid evolution of technology in education. Furthermore, I consider the potential of a Human Rights Approach (HRA) to provide a universal ethical framework in AIED that transcends cultural boundaries, promoting inclusivity and justice across global educational contexts.



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