

Culturally Sensitive Social Robotics for Africa



Carnegie Mellon University Africa, Rwanda
University of the Witwatersrand, South Africa

1.1 Culturally Sensitive Social Robotics for Africa

10.2 "... empower and promote
social ... inclusion of all"



The Relevance of Robotics to SDGs

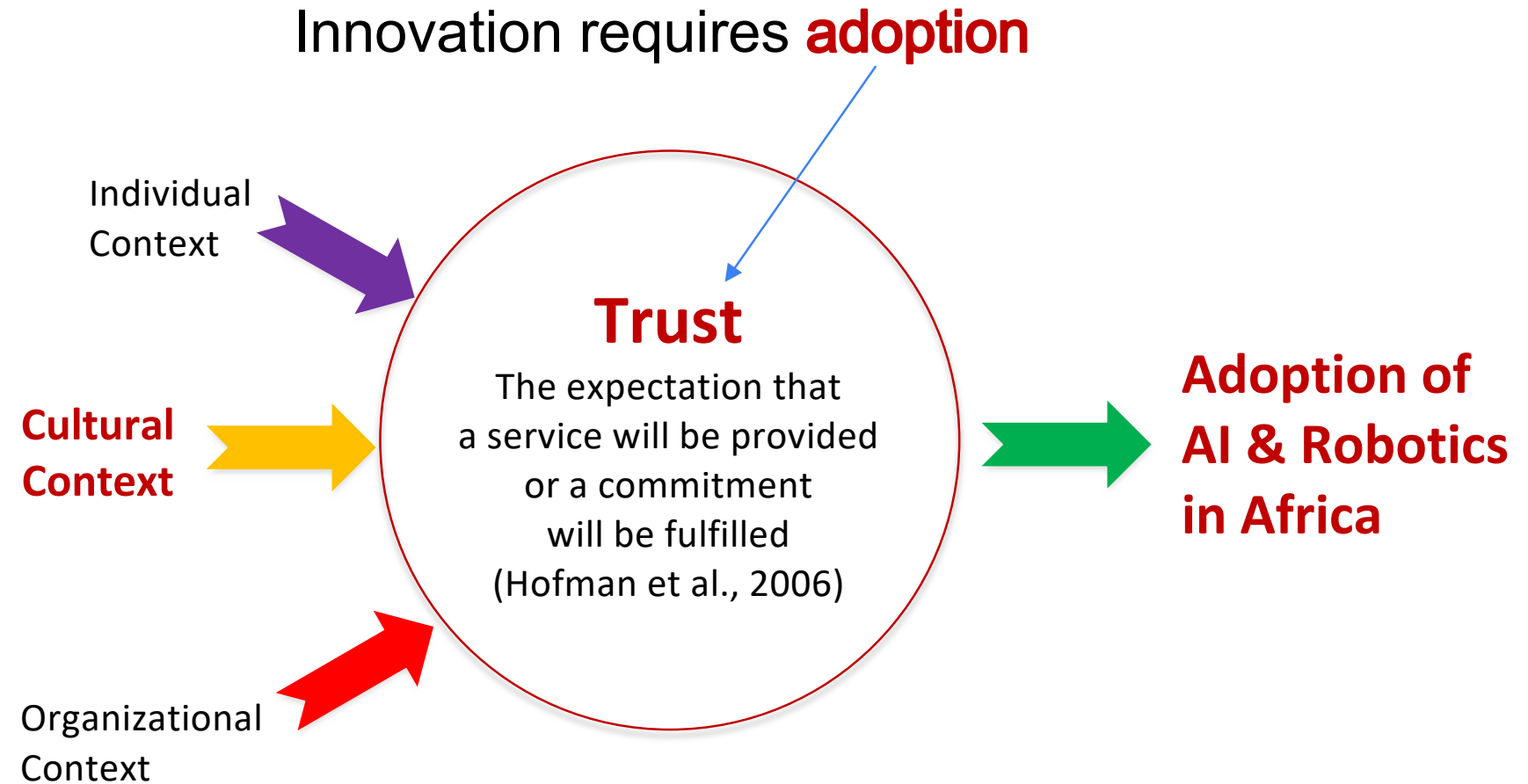


Mai et al., "The Role of Robotics in Achieving the United Nations Sustainable Development Goals — The Experts' Meeting at the 2021 IEEE/RSJ IROS Workshop", IEEE Robotics & Automation Magazine, March 2022.



1.1 Culturally Sensitive Social Robotics for Africa

The Problem: Invention vs Innovation





1.1 Culturally Sensitive Social Robotics for Africa

Why Now?

REPORT

The Fourth Industrial Revolution and digitization will transform Africa into a global powerhouse

Njuguna Ndung'u and Landry Signé · Wednesday, January 8, 2020

<https://www.brookings.edu/research/the-fourth-industrial-revolution-and-digitization-will-transform-africa-into-a-global-powerhouse/>



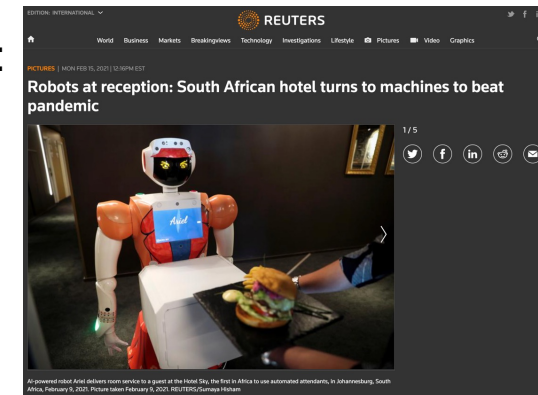
An Ubtech CRUZR service robot deployed by ZoraBots Africa Ltd. to check the temperature of travelers arriving at Kigali International Airport, Rwanda.

Global social robotics market:

\$1.98 billion in 2020

\$11.24 billion by 2026

<https://www.researchandmarkets.com/reports/5120156/social-robots-market-growth-trends-covid-19>



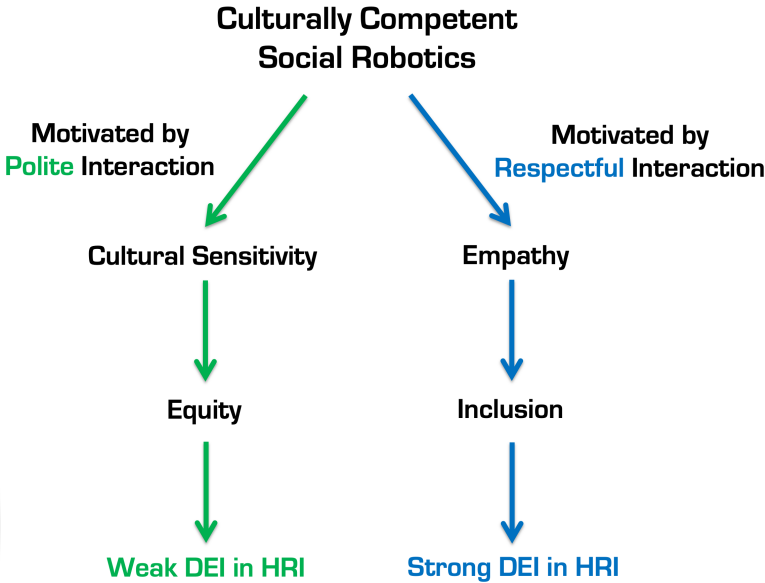
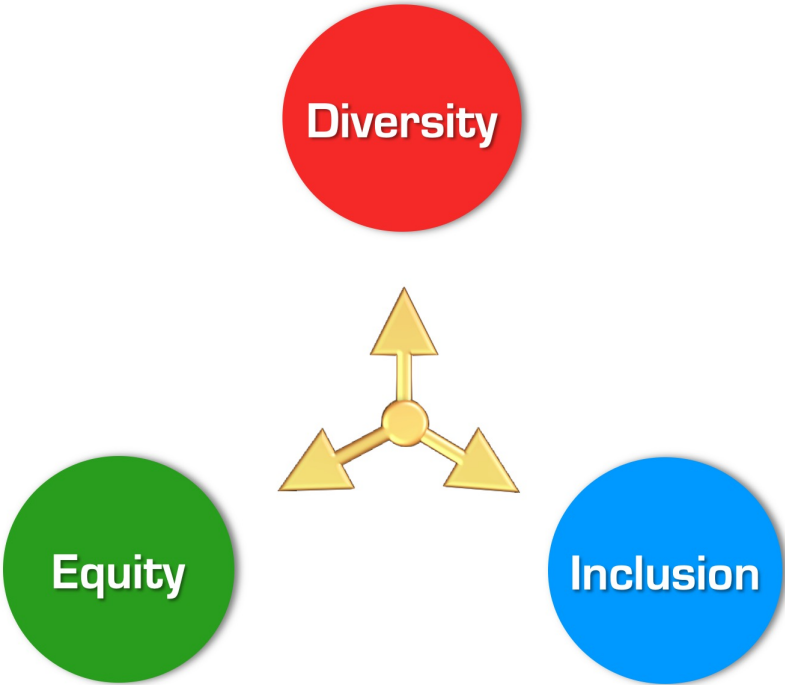
<https://www.reuters.com/news/picture/robots-at-reception-south-african-hotel-idUSKBN2AF0QX>

1.1 Culturally Sensitive Social Robotics for Africa

The Promised Land

Table 1: A Sample of Eight of the Twenty-Five Instances of African Cultural Knowledge from [20]

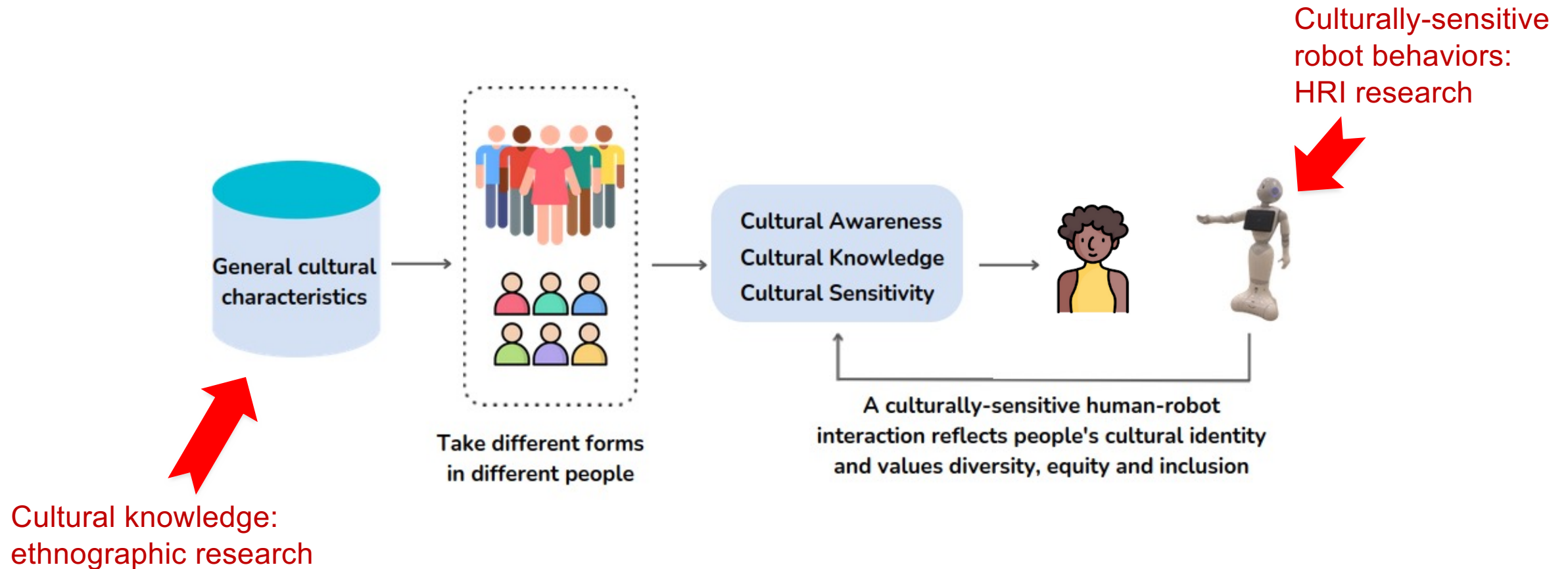
No.	Socio-cultural Norm or Trait
1	All interactions should begin with a courteous greeting.
5	To show respect, one should bow slightly and lower gaze when greeting someone older.
8	One should use an open palm of the hand to point to people and objects.
10	One should not use the left hand to point to anything.
19	One should not make persistent eye contact with an older person.
21	To show respect, one should shake hands with the right hand and use the left arm to support the right forearm when doing so.
23	One should not walk between two or more people who are conversing; it is considered rude to do so.
25	Behaviors should focus on fostering social connections and relationships; they should not be purely functional.





1.1 Culturally Sensitive Social Robotics for Africa

Challenges





1.1 Culturally Sensitive Social Robotics for Africa

The Team

Benjamin Rosman

- Professor in Artificial Intelligence and Robotics, University of the Witwatersrand
- Head of Robotics, Autonomous Intelligence and Learning (RAIL) Laboratory
- Founder of the Deep Learning Indaba Machine Learning Summer School
- Google Faculty Research Award (2017) & Google Africa Research Award (2021)

Pravesh Ranchod

- Senior Tutor, University of the Witwatersrand
- Co-founder of the Artificial Intelligence and Machine Learning Laboratory
- Director of Robotics, Autonomous Intelligence and Learning (RAIL) Laboratory

David Vernon

- Research Professor, Carnegie Mellon University Africa
- Emeritus co-chair of IEEE TC for Cognitive Robotics
- Author of several books on robotics, cognition, and computer vision
- Coordinator of two European research networks and research director & technical coordinator of several research projects



www.benjaminrosman.com



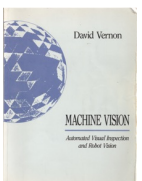
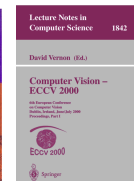
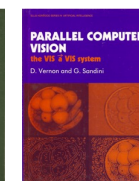
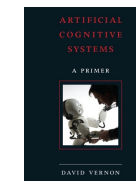
TECHNICAL COMMITTEE FOR
COGNITIVE ROBOTICS



ACTIVITIES RESOURCES DISTINGUISHED LECTURERS MEMBERS CONTACT JOIN US

EMERITUS CO-CHAIRS

www.ieee-coro.org



www.vernon.eu

Questions?
Comments?
Feedback?

(more information coming soon at www.CSSR4Africa.org)