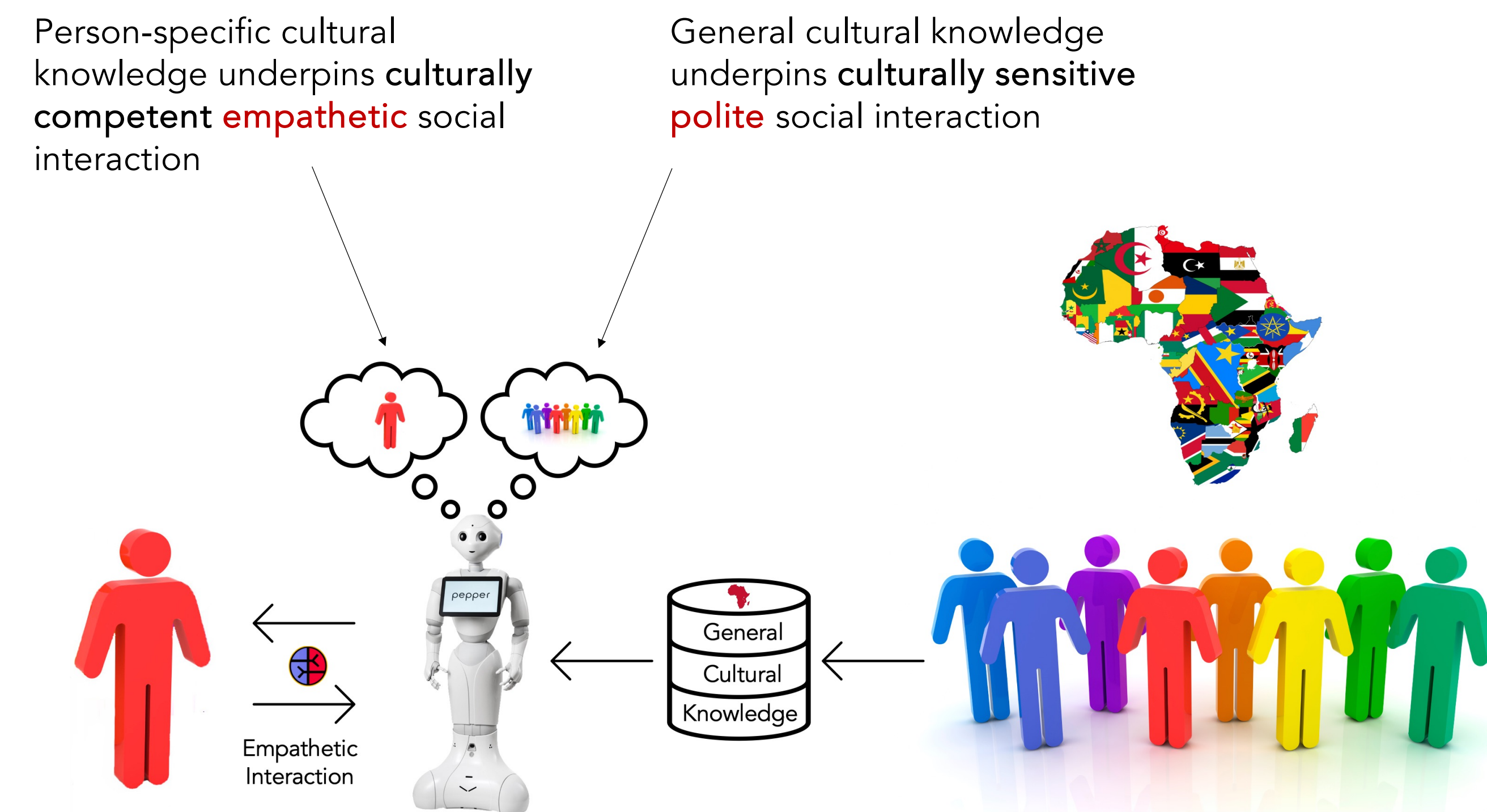


Culturally-Sensitive Social Robotics for Africa

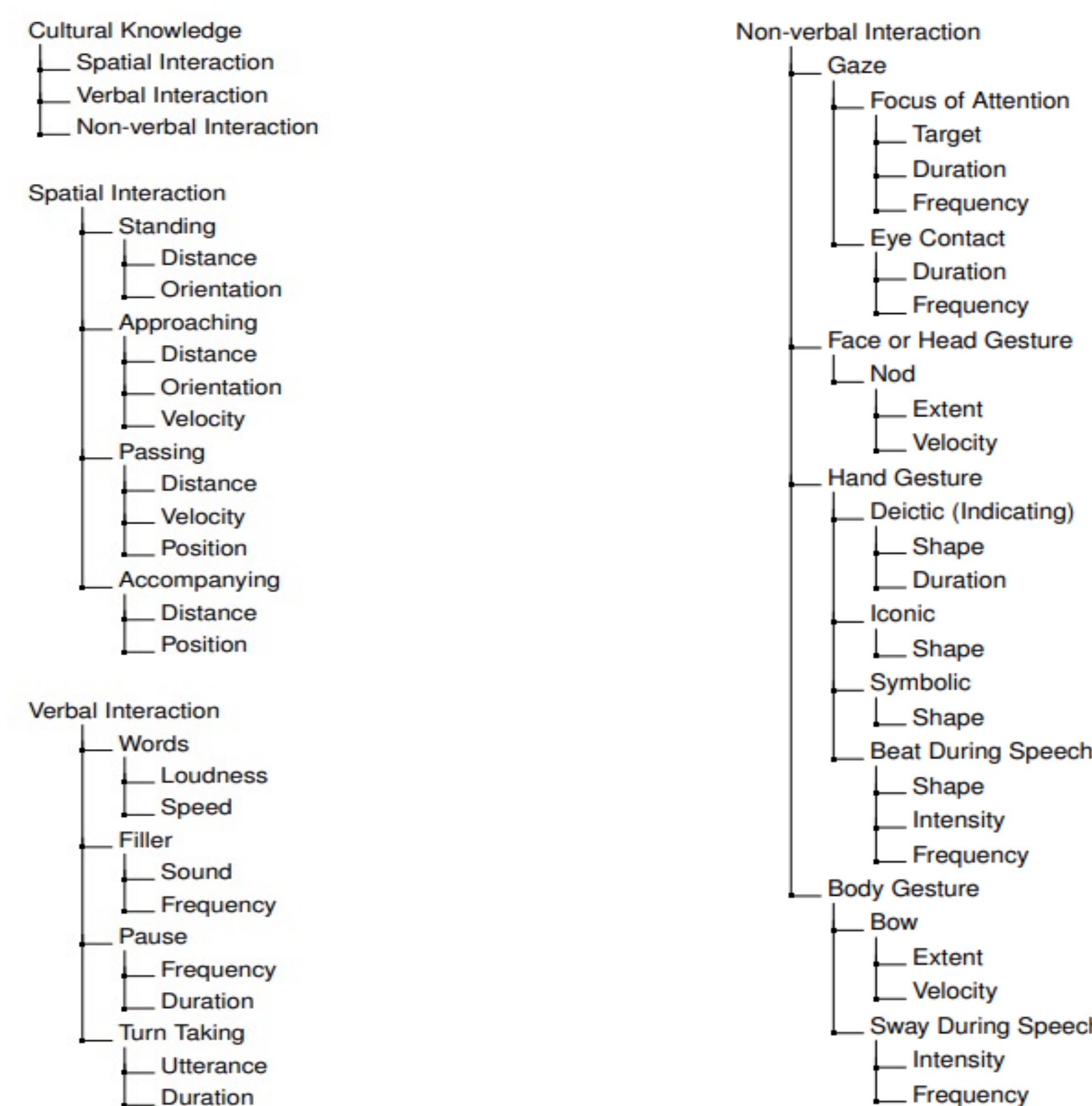


Research Goals

The CSSR4Africa project is working to equip social robots with the ability to interact sensitively and politely with people in Africa using spatial, non-verbal, and verbal modes of communication.



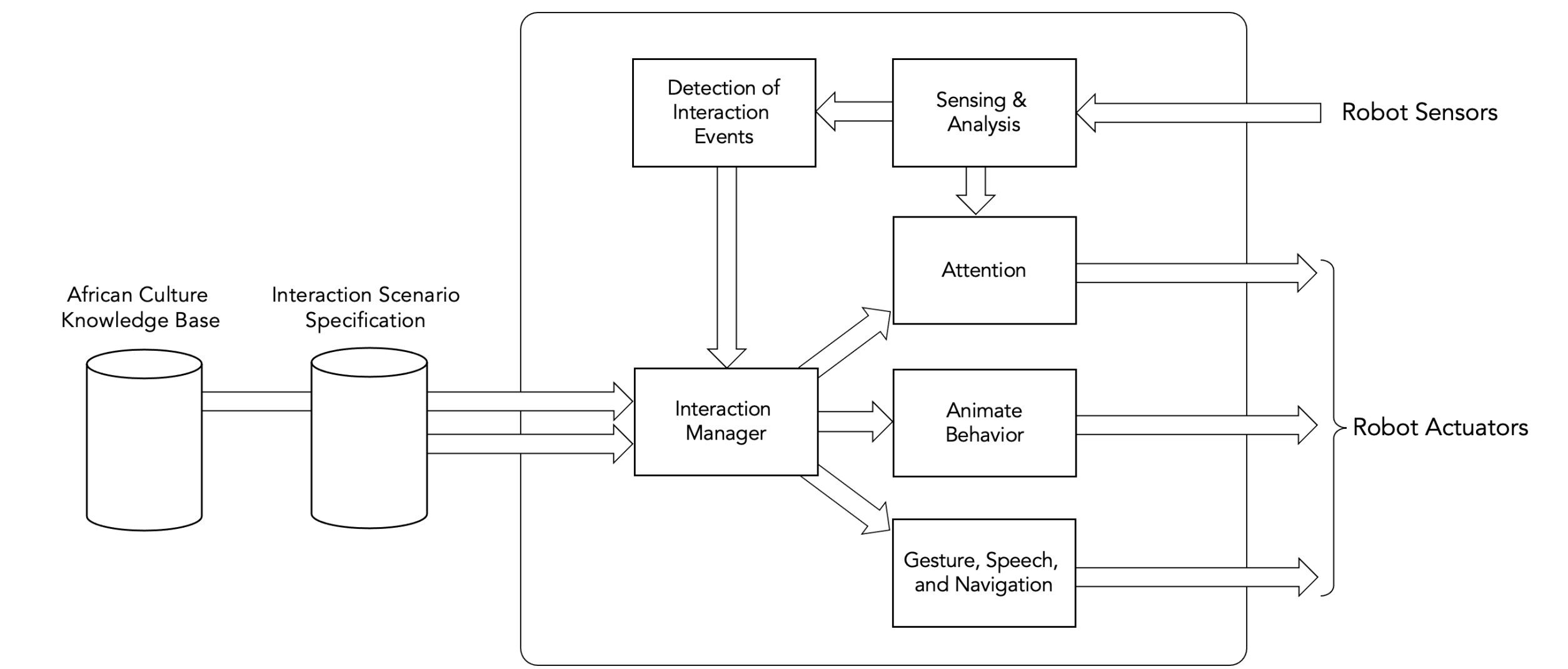
Cultural Knowledge Ontology



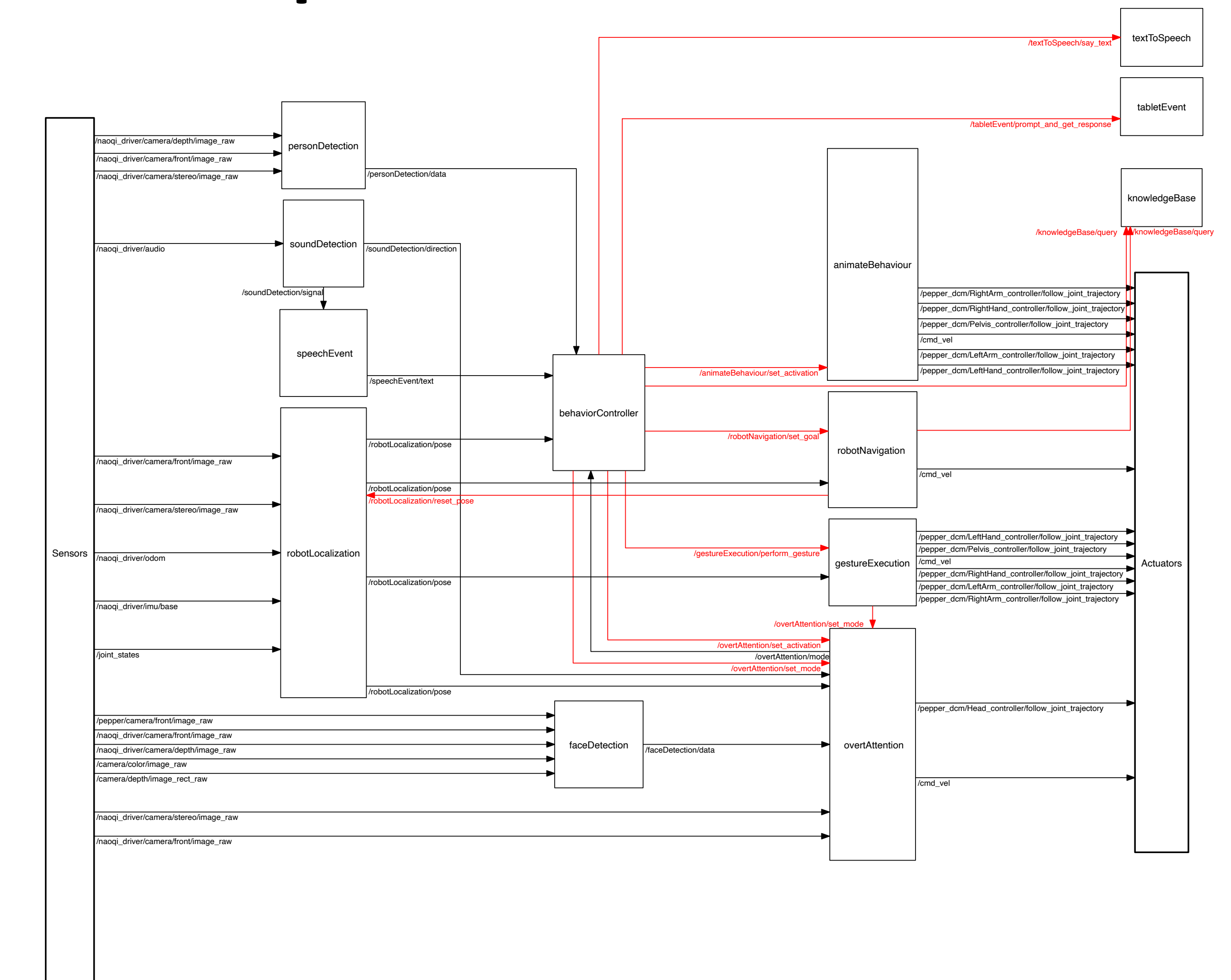
The Pepper Social Robot



System Architecture



ROS Implementation



Publications

- A. Akinade, D. Barros, and D. Vernon, "Biological Motion Aids Gestural Communication by Humanoid Social Robots", International Journal of Humanoid Robotics, Accepted for publication, January 04, 2025
- A. Akinade, Y. Haile, N. Mutangana C. Tucker, and D. Vernon, "Culturally Competent Social Robots Target Inclusion in Africa", Science Robotics, 2023.
- D. Vernon, "An African Perspective on Culturally Competent Social Robotics: Why DEI Matters in HRI", IEEE Robotics and Automation Magazine, Vol. 31, No. 4, pp. 170-200.
- P. Zantou and D. Vernon, "Culturally-Sensitive Human-Robot Interaction: A Case Study with the Pepper Humanoid Robot", Proc. IEEE Africon, Nairobi, Kenya, , 2023.
- P. Zantou and D. Vernon, "Inclusion Drives Sustainable Development: The Case of Social Robotics for Africa", Poster Presentation, ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies COMPASS, 2023.

This research was carried out as part of the Afretec Network. Afretec is led by Carnegie Mellon University Africa. The network is working in partnership with the Mastercard Foundation.

Example Cultural Knowledge

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	Behaviours should focus on fostering social connections and relationships; they should not be purely functional.