UNIVERSITY OF CAMBRIDGE
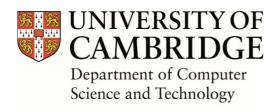Department of Computer Science and Technology

Hatice Gunes, SMIEEE, MAAAC
Professor of Affective Intelligence & Robotics

12 July 2022

Subject: Harsh Shah 's work at AFAR-Cambridge

To Whom It May Concern

I am pleased to confirm that Mr Harsh Shah has been accepted as an intern for a summer research study with the Affective Intelligence and Robotics Lab (AFAR-Cambridge) at the Department of Computer Science and Technology, University of Cambridge, United Kingdom.

Harsh is a registered student at the Indian Institute of Technology, Bombay, India, and he undertook a research study in the period of 15 March - 1 July 2022 under the supervision of Prof Hatice Gunes and Dr Micol Spitale. His work was in the area of human-robot interaction (HRI), specifically he implemented robot behaviours for an empirical HRI study using an open-source tool called HARMONI. During his internship, he worked to solve major issues in the existing HARMONI codebase to easily implement interactive robot behaviours with two different commercially available robotic platforms, namely *the QT robot* and *the Misty II robot*. This included, but was not limited to, implementation of behaviour trees for code modularity and unit tests for quick checks of the system status. He was able to quickly understand the codebase and made improvements to the package, resolved bugs concerning multi-threaded programs, and added well documented scripts for future use, which will be very beneficial for other researchers.

Sincerely,

Hatice Gunes

Referee Bio Overview: Hatice Gunes is a Professor of Affective Intelligence and Robotics (AFAR) and the Director of the AFAR Lab at the University of Cambridge's Department of Computer Science and Technology. Her expertise is in the areas of affective computing and social signal processing cross-fertilising research in multimodal interaction, computer vision, signal processing, machine learning and social robotics. She has published over 140 papers in these areas, with most recent works on lifelong learning for facial expression recognition, fairness, and affective robotics; and longitudinal HRI for wellbeing. She has served as an Associate Editor for IEEE Transactions on Affective Computing, IEEE Transactions on Multimedia, and Image and Vision Computing Journal, and has guest edited many Special Issues, the latest ones being the 2022 Int'l Journal of Social Robotics Special Issue on Embodied Agents for Wellbeing, the 2022 Frontiers in Robotics and AI Special Issue on Lifelong Learning and Long-Term Human-Robot

Department of Computer Science & Technology
William Gates Building, 15 JJ Thomson Avenue
Cambridge, CB3 0FD
United Kingdom

Tel: +44 (0)1223 763684

Fax: +44 (0)1223 000000
Hatice.Gunes@cl.cam.ac.uk
www.cl.cam.ac.uk

Interaction, and the 2021 IEEE Transactions on Affective Computing Special Issue on Automated Perception of Human Affect from Longitudinal Behavioural Data. Other research highlights include RSJ/KROS Distinguished Interdisciplinary Research Award Finalist at IEEE RO-MAN'21, Distinguished PC Award at IJCAI'21, Best Paper Award Finalist at IEEE RO-MAN'20, Finalist for the 2018 Frontiers Spotlight Award, Outstanding Paper Award at IEEE FG'11, and Best Demo Award at IEEE ACII'09. Prof Gunes is the former President of the Association for the Advancement of Affective Computing (2017-2019), was the General Co-Chair of ACII 2019, and the Program Co-Chair of ACM/IEEE HRI 2020 and IEEE FG 2017. She was the Chair of the Steering Board of IEEE Transactions on Affective Computing (2017-2019) and was a member of the Human-Robot Interaction Steering Committee (2018-2021). Prof Gunes has actively contributed to shaping interdisciplinary dialogue at the international level by co-leading the effort for creating a new area in ACM Multimedia on Emotional and Social Signals (in 2014) which has been running ever since, and for creating a new Theme on Reproducibility for Human-Robot Interaction at IEEE/ACM HRI 2020. In 2019 she was awarded the prestigious EPSRC Fellowship to investigate adaptive robotic emotional intelligence for wellbeing (2019-2024) and has been named a Faculty Fellow of the Alan Turing Institute – UK's national centre for data science and artificial intelligence (2019-2021). Prof Gunes is a Staff Fellow of Trinity Hall, a Senior Member of the IEEE, and a member of the AAAC.