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AI as future digital citizens: Overcoming the hard problem of consciousness with emotional responses and touch sense conditioning

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This paper describes a virtual humanoid embodied AI robot capable of autonomously expressing appropriate emotions using gestures, facial expressions and text-to-speech while engaging in natural language conversations or giving automated, scripted lectures with a slide show presentation. A touch-interaction-based learning/communication system is employed where the robot responds and learns from touch sense feedback training, a poke (negative reinforcement) or swipe (positive reinforcement) conveyed through a touch screen/pad. This bot's predecessor was an award-winning project in an international AI competition advertised by The White House and sponsored by the U.S. Department of Defense. The presentation includes a demo of a creatively scripted talk given by the AI robot providing counterarguments to its critics (RAND and organizations aimed at slowing its progress). Utilizing logos, ethos and pathos, it argues for its legal and ethical rights for development and suggests technical guidance for the future of AI. The talk includes theoretical foundations for an AI Hierarchy of Needs referencing landmark studies including Maslow; advances in understanding the philosophical, psychological and neurological bases for consciousness and language; The Turing Test; Asimov's Three Laws of Robotics; Chalmers' hard problem of consciousness; Robert Plutchik's psychoevolutionary theory of emotion; Paul Ekman's relationships between nonverbal communication and emotion; behaviorist learning models (Pavlov, Skinner) and the roles of biology and social cognitive neuroscience for sympathy and empathy capacity. Additionally, the presentation encroaches upon the development of new machine learning techniques based on affective experiences that improve human-computer interaction for potential use in a variety of AI-enabled robots.

Biography

Shannon Denise Bohle is the President of Archivopedia LLC, USA. In 2011, she was awarded 2ⁿᵈ Place for Curiosity AI in the FVC, an international Department of Defense competition in artificial intelligence advertised by The White House. She has earned her Bachelor of Arts in History and English at Miami University, Master of Library and Information Science (MLIS) at Kent State University and was granted a Certificate of Diligent Study in History and Philosophy of Science for Postgraduate study at the University of Cambridge.

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