1. DESCRIPTION

Who are we in this new mediated age. We see the world with our eyes but what is hidden in the cracks – how do we personally mediate our experiences. What is unseen but still seen. We look to our code art system in the form of a computational abstraction process to emulate human creative theory in AI form to bring out these seen but unseen modalities. To show this seen but unseen beauty there hidden in the mundane, the ugly, the angry or the tied imagery of our waking lives. Humans like to believe they are seeing the world in front of them using the cognition of vision, but science shows us that our visual system is a deeply filtered and personal internalisation of the world in front of us. A lucid self.

Our Deep Learning Neural Network software uses a hand tuned Artificial Intelligence (AI) abstraction process that makes explicit autonomous evaluations of the novelty and value of the source imagery as it abstracts. Our cognitive based AI creative process works can be viewed as a computational version of human creativity, for example, Jennings (2010) includes such autonomous evaluation as a necessary condition for creative autonomy. In terms of novelty, the abstraction system creatively isolates and maximise subsets of the visual features evoked by the still and video based source imagery, resulting in the emergence and/or enhancement of certain aspect image qualities (or whole levels of abstraction) at the expense of other qualities. The unseen becomes alive or re-amped. This process can be construed as the computation of one or more aesthetic value metrics. It bears a resemblance to neuroaesthetic principles of art, such as Zeki’s (2001) notions of stimulating discrete portions of visual processing and translating the brain’s abstractions onto the canvas. In this way the abstraction system can bring out shapes and unintentional objects in ways associated with the human creative process. This type of system with open ended perceptually valid parameters allow us to author multiple levels of abstraction in ways that bring out the ghosts that are hidden but there in our mediated lives.

Within our authoring flow, the AI abstraction process uses images of natural sources such as tree bark, bees; as ‘guide images’ in order to compare how various guide images have an impact on the aesthetics. The source of each frame image is extracted from the videos and fed to our system to obtain the output images from different perceptual abstraction levels of the AI neural network.

The finalised set of imagery consists of multiple still and video layers of perceptually related visual blends processed from the source video documentation. Using a Kinect v.2 motion sensor connected to Unity interaction software, which is then displayed on a projection system. This allows the participants to interactively communicate (e.g. move through abstraction layers) with the perceptual video layers via their body movement.

We use parameters from the analysis to automatically generate unique artworks or “aesthetic visualisation” from multiple data sources including AI knowledge from the painting process in an interactive process where art is created from live user movement and emotional awareness. This work has applications in computational creativity, experiential learning (of art) and movement visualisation.

A short movement is sensed live and is then used as the source to alter the original art still. All aspects of these final images are created generatively with texture synthesis cognitive and affective synthesis (using the palette and rules of art source and movement) as well as the rules, styles and elements from the master artist. These various forms include abstraction (the dream state), reality (the actual state), displeasure (negative emotional state), and pleasure (positive emotional state).