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Amrinder's Bio

Amrinder Singh Romana is a senior lecturer at Leeds Beckett University with 15 years of experience in creative technologies. Amrinder is completing a PhD on enhancing facial expression realism in 3D characters and authoring a book titled "Facial Animation in 3D, Games, and Extended Realities," set for a 2026 release.

Title: "Embodying Movement of Emotion: An Exhibition of 3D Printed Heads Depicting Posed Facial Expressions"

Introduction:

In the dynamic field of digital animation and artistic innovation, the representation of human emotions through facial expressions is a pivotal frontier for exploration. This proposal introduces an exhibition titled "Embodying Movement of Emotion," which aims to transcend the boundaries between cutting-edge digital animation technology and tangible, physical art by showcasing a series of 3D printed heads. Each head represents the synthesis of a maximum range of movement as a reference, rather than a definitive definition of an expression, derived from the Facial Action Coding System (FACS).

Background:

The genesis of this project lies in extensive research into digital animation, particularly the development of a Parametric Framework and Tool that utilises FACS to enable precise control over facial movements in 3D characters. This tool, designed to enhance digital characters' authenticity and emotional depth, is the foundation for translating digital expressions into physical forms.

Objective:

"Embodying Movement of Emotion" offers tangible insights into the intricate and diverse spectrum of human emotion movement as depicted through digital animation techniques. Through presenting these posed facial expressions in 3D printed form, the exhibition catalyses multidisciplinary conversations among artists, animators, technologists, and scholars on the converging paths of digital technology, artistic expression, and human emotion.

Methodology:

Creating 3D-printed heads entails a meticulous selection of facial expressions spanning various human emotions. Each expression is digitally modelled using the Parametric Framework and Tool, ensuring fidelity to the nuanced subtleties of human emotional expression movement. Subsequently, these digital models are brought to life through high-resolution 3D printing, capturing every detail of the synthesised maximum range of movement as a reference.

Significance:

"Embodying Movement of Emotion" goes beyond showcasing the potential of digital tools in artistic creation. The exhibition contemplates the nature of emotion and expression in the digital era. It underscores the symbiotic relationship between technology and art, illustrating how digital tools can enhance and broaden the horizons of creative expression and understanding.

Future Directions:

The exhibition inspires further exploration of digital techniques in art and animation, emphasising the importance of interdisciplinary collaboration in advancing our understanding and representation of human emotions. It sets the stage for future projects that blend digital innovation with traditional artistic mediums, unlocking new realms of creative expression and scholarly inquiry.

Conclusion:

"Embodying Movement of Emotion" materialises digital emotions in physical form, offering a novel perspective on the movement of facial expressions. Through this exhibition, I illuminate the intricate interplay between technology and emotion, inviting attendees to engage with and reflect on the profound connections between our digital creations and shared human experience.



