Research Paper for Gesture Based UI Development

Due Date: Monday 15th February 2021 (or earlier is acceptable) – Weighting 30% of module

Gesture Based User Interface Experience –

Accessibility, Evolution and Challenges

Write a research paper based on the title provided. The purpose of this exercise is to research the User Interface as it moves from purely physical (mouse, keyboard, touch screen) to include intuitive interaction through gestures. The paper should be circa 3,000 words in length excluding references.

Requirements

Write up the project under the following headings including all references as evidence of your research.

User Experience Evolution – Originally with just a keyboard and screen, computers have evolved to include a mouse, touch screen, voice control, virtual & augmented spaces and gesture recognition. What is the User Experience and what are the drivers in the evolution process? Why are user's never happy with the current iteration of interaction with computing systems? What are the challenges faced by each generation as new interactions are marketed to users from both acceptance and implementation perspectives?

Gestures as a communication tool – how are gestures used in everyday life for communication with others? They are a universal tool albeit without a unilateral meaning and interpretation. How are gestures defined and become accepted to represent various aspects of communication?

Challenges for design of applications – Incorporating gestures is an important part of the design phase. Using the wrong gestures will leave users confused and frustrated as they learn a new system. The functionality of the system has to be appropriately mapped to the gesture set available in such a way to reduce the learning curve and the resistance gradient of the user.

Challenges for implementation – deciding that a particular gesture should carry out a particular function is one thing, actually tracking that gesture and deciding when it has been made is a different challenge. Looking at some systems and the gestures they use, what are the challenges in implementation that had to be overcome for those systems? How were those challenges met (if they were met)?

Conclusions – Conclusions are what you have learned from your research. This is your reflection on the current state of the art and the possible future directions of gesture-based user interfaces.

Marks Awarded

Paper is worth 30% of the module marks and is to be submitted via Learn Online on or before the deadline. PDF file to be submitted – no other format will be accepted.

Marking Rubric for Documentation

0 – 35	35 – 75	75 – 100
Poor use of grammar, structure and content with little evidence of knowledge of the problem domain	Good use of grammar, structure and content with satisfactory evidence of knowledge of problem domain	Written and structured to a high standard with content that exhibits a comprehensive knowledge of the problem domain
Limited evidence of research, critical analysis and conclusions	Some evidence of research, critical analysis and conclusions	Extensive evidence of research, critical analysis and conclusions
Poorly referenced document, with frequent cut & paste of other documents	Some references provided to support points made in paper	Considerable reference material provided.