A Roles of GUI (Graphical User Interface) Observed in Hollywood Blockbuster Film

Jooyeon Yook and Jinhwan Yu
Hong ik University
801-905 Dong-ik APT, Suseo dong, Gwangnam gu Seoul, South Korea, 121-160
66666ju@gmail.com and yujinhwan@gmail.com

ABSTRACT
A film provides inexperienced spectacles for audiences, and they watch the film to gain new experience. Moviemakers have made an effort to survive in many forms of mass media. The effort has been developed more progressive than other media. First, they actively embrace new technology to differentiate themselves from the other media, and present entertaining and interesting shows. The virtual, digital technology visualizes new time and space elaborately, providing audience the spectacle experiences. It consists of Computer Graphic, which visualizes the virtual world as reality, and new digital technology, which produces entertaining show. The new digital technology, which is adopted from the early Hollywood’s blockbuster movies, now plays key role in contemporary movies beyond the realm of spectacles. Virtual, digital technology, combined with cinematic imagination and new technology, not only contribute to entertainment, but also influences on the narrative of movie. The audience reacts mostly to the visualization of digital technology. This study examines how digital technology is used for GUI (Graphical User Interface) in movie. To analyze the GUI pattern that works in Hollywood’s blockbuster movies after “Minority Report”, which presents the new interaction between human and computer, the blockbusters are reviewed by GUI type that is visualized in the movies. Furthermore, it gives us the knowledge about the visual media that affects audience with visual elements. As the new and visual technology is developed and attracts audience, it will contribute us to understand why our society clings to the appearance.

KEYWORDS
Digital Technologies, Block Buster, Graphical User Interface, Interface and Hollywood Film

1. INTRODUCTION
1.1 Background and Purpose
Most of Hollywood’s blockbuster movies often utilize virtual, digital technology strategically to allure audience. To catch the audience’s attention, it represents real world and uses fancy images. As the demand is increased, the Hollywood’s box office success is continued. The major films draw audiences, who are fascinated by the splendid images, into its characters and plot, identifying themselves with the characters. That is, the movie must retain meaningful story and audience who are entertained with the image. Graphic image, which represents the image in film, is central to develop new genre. And the illusory spectacle is adopted, especially in technological thrill film [1]. Movie, produced as technological art, undergoes huge change than ever, encountering with parameter of digital technology, which opens the gate of new paradigm. The combination of Digital technology and movie retains great impacts on the movement of early cinemas, creating “Star Wars episodes”, which becomes pride for American SF movies. “A Trip to the Moon (1902)” is recreated with new spectacle and illusion since 1902 when Georges Méliès made the film. [2]

![Figure 1. "A Trip to the Moon (1902)" , Georges Méliès](image)
The illusory open plot of traditional movies are changing, and the character and synopsis becomes less interested in. Taske argues that the ideology of the movie’s story and subject are not vanished, however, the visual expression must be explicitly accepted and analyzed as aesthetic form. For now, the visual expression in movie is reviewed in this article as aesthetic form in realm of entertainment. The digital technology takes responsibility for one axis of narrative as well as aesthetics.

1.2 Research Method and Subject
This study examines the represented graphic interface to analyze the function of digital technology in movie. Virtual technology in the movie requires the interface for interaction between human and computer. Interface is one of the visual elements as core in technological thrill film, where the new technology is visually represented. Analysis of interface in movie will explain how digital technology of movie is able to provide spectacle experiences to audience, how it works in movie, and what makes it different visual from the real world. Through this study, the excessive illusion or expectation from obsession to the exaggerated visual images of digital technology in movie will be overcome.

This study categorizes some cases to understand the role of GUI in movie, through examining the concept of spectacle that is used in movie since it appears and principles of GUI in movie from HCI (Human Computer Interface) perspective in chronological writing for the correlation between movie and digital technology. The chronological consideration discovers the cause why Hollywood has adopted the digital technology than real world, the necessity of GUI application in movie, and types of GUI in movie per period, demonstrating it is developed with the changes of time.

The target is blockbuster movies that are produced in Hollywood after “Minority Report” where the GUI has been presented for the first time. The blockbusters apply various cinematic effects, especially exaggerated visual effects, to create spectacle, representing spectacles with consideration of new digital technology development and graphic elements since 2002 when “Minority Report” is released.

2. Film, Spectacle and Digital Technology
2.1 Blockbuster Film and Spectacle

McNamara said that ‘appealing to sense and spectacle always attract people to theater’ [3]. Historically Hollywood blockbusters have provided spectacle experiences to audience with popular actors, splendid visual effects, and latest technology. The audience who seeks for spectacle experience prefers these movies, and Hollywood blockbuster lead the trend of visual digital technology that contributes to the box office success. The success becomes good stepping stone for collecting funds of next movie, and it makes possible for another digital technology. This flow has been continued till today, and the virtual, digital technology of blockbusters becomes a sort of formula, pleasing audience with the spectacle visual effects. These movies have storytelling as well as various, creative visual performances, using cinematic manipulation with close-up, multiple shooting, and motion change. As audience is accustomed to splendid visual images, they become more interested in spectacle images than the story itself. Thus, graphic is now overwhelming the story [4]. “When Arrival of a Train at La Ciotat (L’Arrivée d’un train en gare de La Ciotat, 1895)”, directed by The Lumière Brothers for the first time, is released, the episode that an audience run away as the train is coming up from the screen is well known.

McNamara said that ‘appealing to sense and spectacle always attract people to theater’ [3]. Historically Hollywood blockbusters have provided spectacle experiences to audience with popular actors, splendid visual effects, and latest technology. The audience who seeks for spectacle experience prefers these movies, and Hollywood blockbuster lead the trend of visual digital technology that contributes to the box office success. The success becomes good stepping stone for collecting funds of next movie, and it makes possible for another digital technology. This flow has been continued till today, and the virtual, digital technology of blockbusters becomes a sort of formula, pleasing audience with the spectacle visual effects. These movies have storytelling as well as various, creative visual performances, using cinematic manipulation with close-up, multiple shooting, and motion change. As audience is accustomed to splendid visual images, they become more interested in spectacle images than the story itself. Thus, graphic is now overwhelming the story [4]. “When Arrival of a Train at La Ciotat (L’Arrivée d’un train en gare de La Ciotat, 1895)”, directed by The Lumière Brothers for the first time, is released, the episode that an audience run away as the train is coming up from the screen is well known.

The scene gave the audience the new spectacle experience. Gunning asserts that “though the audience recognized as it is just an image, the illusory movement made the audience surprised and silent because of the marvelous illusion”. According to his mention, audience has become excited to the new illusion, and technological equipment will change the success of movie. Despite of the time change, spectacle experience
will still attract audience to the theater. The most obvious example of revolutionary spectacle in late twenties is ‘blockbuster’ movie, which is technology-intensive and full of special effects, focusing on image and form. Since 1970s, blockbusters have become an elaborate strategy in Hollywood movie-making system. There were the initial works in 1970’s: “The Exorcist (1973)”, “Jaws (1975)”, “Star Wars (1977)”, and so on (Schatz, 1933). In 1980s, improved special effects are used in film, and the technique of digital image is developed as the spectacle image and action acquire the position of cinematic component for composing story and meaning, beyond simple effect. This movie were as follows: “Alien (1979)”, “Blade Runner (1982)”, “The last Starfighter (1984)”, “RoboCop (1987)”, “The Abyss (1989)”, “Total Recall (1990)”, and so on [5]. In current Hollywood movies, any special effect sequences or narratives are not used unaccountably, unrealistically, or supernaturally. According to Warren Buckland, special effects transform ‘the possible world’ as ‘the actual world’ [6].

The spectacle of movie is not simply experienced by eye, but fully experienced, combined with narratives. Special effect of movie is pleasing to be recognized as the effect of technology or staged scene, not as the real world, embracing the reality of image and illusive imagery. The audience is extremely excited when a new technology-combined machine appears in the popular film.

2.2 Spectacle before Digital Technology Era in Film

Early movie attracts audience to the screen with extremely visual pleasure and action. It has been reduced by half since from 1946 to 1960 when TV has appeared, removing cinematic illusion. To resist, Hollywood has propounded spectacle blockbusters, which have explosive potential as to destroy one block in the Second World War, detonating a time bomb of follow-up series through success of the original movies. In 1950, large production such as “Ben-Hur (1959)” gained box office success, but the blockbuster market has been developed in earnest after the complete success of “The Sound of Music (1965)” [7]. At that time, the blockbusters utilize large scale of screen, stereophonic sound, and stereo-imagery to bring special experience, differentiated with TV. After that, movie fascinates audience in short running time with simple plot structure, excessive emotional expression, and exaggerated story.

2.3 Development of Spectacle Film

The advent of digital technology has influenced on film industry. In late twenties, the remarkable example is blockbuster movie. Providing new experience to fascinate audience collects big capital and facilitates actively new technology, making huge profit.

To examine the effect of digital technology in movie, the definition of digital image must be specifically identified. Jan Simons defines the feature of digital image as follows: ‘First, digital image is immaterial, not based on material; Second, digital image influences on the sense of sight as well as hearing and touch. And the elements, which appeal to these senses, are saved, distributed, and accepted by the way of digital; Third, digital image is easy to be manipulated [8].’ Therefore, the subject of this study is immaterial, sensitive, and manipulated digital images that are stated by Jan.

During 1960s and 1970s, lot of computer graphic researchers has been interested in the descriptive image until the end of 1970 when the graphic image is well positioned. Blockbusters become popular Hollywood movies based on the elaborate and core business strategy after 1970s. The first scene, which is made by computer, has appeared in the movie of “Star Wars episodes”. ILM (Industrial Light & Magic), established by George Lucas for “Star Wars episodes Ⅰ”, has been leading the technique of special effects in film making.

Excessive budget is invested in utilize a special effect in the middle of 1980s and be inputted
actively the technical of special effect revived newly. This movie is getting more power growing variously for the technique of digital image. The effectiveness of digital image through articles and so on seen in animation planet of “Star track II: The Wrath of Khan (1982)”, space war scene of “Star fight (1984)”, “The fear of pyramid (1987)” from the beginning of “Tron (1982)” of first play movie made by most computers. This special effect of movie has a same position with content gradually. From the late in the 1990s the movie utilizing a digital technique stood out technology and made audience pay attention itself. These movies can be regarded as a kind of ‘the movie of exposure’. A science fiction films like this these days reveals technique itself even if classic movie provided the pleasure of looking at like peeping based on clarity [9]. Also the movie utilizing a digital technique is mostly serials, such as “Star wars (1995)”, “Mission Impossible (1996)”, “The Matrix (1999)”, and “The Lord of the Rings (2001)”. This gives a pleasure through the behavior comparing a new technique with former movie based on basic knowledge the audience has. This change affected the way of acceptance audience watch and enjoy. This study examines the cast of movie, plot, hero with audience himself, and be fascinated in ‘captivated’ brilliant image for accepting a main digital film actively like technological thrill movies. For example, “Terminator 2: Judgment Day (1991)”, “The Mask (1994)”, “Speed (1994)”, “True Lies (1994)”, “Independence Day (1996)”, “Starship Troopers (1997)”, and “Titanic (1997)” [10]. Development of movie in the former digital age was mainly drama about story not the form of relying on the view. So the pleasure audience got stood out narrative form in the movie. The movie creates visible spectacle not found in reality and diversifies the form of visual expression through computer graphic as digital technique. This visual factor acted as filling in the pleasure of audience instead of narration and was opposed to narration a little inevitably once. Because visual factors of excess hindered the absorption of narration for audience. Till the end of 1990s digital technique was used for elevating visible pleasure of movie extremely so there was the worry that story did not reveal. Thus digital technology made the movie having audio-visual attraction that effect revealed directly, the movie including the sense for the real and well-neat story was shrunk comparably. A blockbuster movie got a box-office record thanks to marketing there was an occasion reduced by half interest by a loose scenario and simple plot. Ending this worry and showing new possibility is definitely “Matrix (2009)”. It got the evaluation that level of technology in digital special effect upgraded one step finally by thinking the danger that digital technology would take and the amazing digital effect either. This movie were as follows: “The Lord of the Rings (2001), (2002), (2003)” in the three parts, “Minority Report (2002)”, “Spider-Man(2002)” [11]. After that the cost of making film increased rapidly by an enormous special effect and injection of human resources for Blockbuster.

3. Film and Interface

3.1 Chronicle of Interface

This paper need to deal with the origin of interface before telling interface about movies. Human need the path for communication and machine to new machine for human this study define this path as interface in HCI (Human Computer Interface) field. Every machine included interface certainly, the movie have utilized actively interface to show the high-tech machine. Interface is composed of input device feeding information and output device showing processed data. There are input devices and output devices in general computer between the bottom man and the above computer as seen in Fig. 4.

![Figure 4. Interaction between computer and human](image)

Four steps is mainly done in these input and output devices. It is the same interface exactly as
computer input and output devices that man contact and information expressed in that devices at this moment. It is marked by ellipse seen in picture 4. So interface means that input and output devices of computer namely and interface planning is designing these input and output devices. Interface sometimes has an occasion confused with interactions. Interaction is kind of communication course that computer and human give and take through the medium of these input and output devices. So four types of arrows in picture 4 are exactly has seen interaction. Interaction means that communication process between computer and human, so the planning of interaction means designing human behavior and computer process namely. That is, the planning of interaction is not only designing the factors seen in computer screen like button and image simply, but also designing the factors influenced at computer and human behavior not seen in the computer screen [12].

Classification of input devices is divided into letter input and location input according to what information this paper input. At this moment character means inputting like Korean, English, numbers, pointing means inputting choosing a specific region and moving or marking and so on. Latter input is divided into pre-recognition input and post-recognition input. Pre-recognition input is determining after being inputted the determination about what letter inputs is for computers human take the examples speech recognition and scanning input. Post-recognition is previously determined what letter before inputting keyboard is typical example. Thus pre-recognition is doing final determination about what inputted letter is for computer, post-recognition means inputting letters after being determined by human previously for this determination. Location input devices is again divided into direct device and indirect device. Direct device is directly marking the location that user will input at pertinent point optical pen or touch screen belong to this. Otherwise indirect input device is putting data about the location as a separate device from device inputting real location, mouse is typical example [13].

3.2 The Interface in Film
To change interface in movie to the concept of film then it can be regarded as one kind of action image defining Gilles Deleuze. Deleuze pulls the change in the role of Action-image and circumstance and situation surrounded the role and by this change the narrative is born and folded. For example the role is the agent leading the narrative [14]. By the way, the special factors surrounded the role at this point is easily thought of not acting and not being able to respond different from the role. But if these special factors move for themselves or make other factors in space respond these will be also regarded as action image. Thus interface shaping ghost in movie can be mostly said to an action image like this by the character that interface is posed in the role and contact point with other media basically.

Interface in movie gives a lifelike experience through high density, polished graphic and spectacle image. Audience enters the world in image in front of image through interface. Interface acts the key for approaching media art embodied cyber space and be the basic being able to make interaction between piece and receiver [15]. Being composed a digital image for interface in movie can be a virtual reality for the reality of interface. It can be a made-up interaction by editing even if it can be seen as acting really like image simulation in movie. Interface cannot help appearing the phenomenon unified future imagination different from reality by technique existed in a virtual reality either. Stronger the purpose that will give a newer visual effect it is not matter of reality. Of course it is more important purpose how many inspector it gathers only, except for the primary purpose realizing future interface having big gap with reality visually. For this movie director should provide new visual effect not seeing ever before simulation of interface becomes acceleration. There exists the “Minority Report (2002)” as an example showing a simulation of interface best fit. The most attractive thing in this movie is a design of futuristic ‘interface’ as expected. It is not seen devices shaped monitor, keyboard and mouse there. User only wears black gloves attached sensor then opens image directly, closes, expands and edits. Input and output of data is thoroughly done by the way of intuition like this. Responded interaction is done according to behavior and psychology of user. That is when user sits on chairs in movie working stand appears in very front of empty space. After finishing working this virtual image disappears suddenly. Namely
interface design is realized using augmented reality [16]. At this moment, whether interface is real is not important. Nothing but how nice it looks is important. Audience knows interface is not real through digital image but feels spectacle by being worked for it and soaking in story after accepting it wholly.

4. Analysis
4.1 GUI with Spectacle
This research has a will to analyze in each type what GUI in movie plays a role for utilized GUI. The form realized in movie for digital technology is graphic image. The image realized by computer graphic contains digital character and is available to mix, copy, change, moving and so on. Visual effect made by utilizing digital technique disregarded as physical character is shocking enough to give audience spectacles. Now movie utilizes spectacles a kind of factors for sensation. This study found examples utilizing GUI in these types.

![Figure 5. “Iron Man 1 (2008)"

3D hologram modeling seen in the iron man shows the scene realized in hologram by drag for a designed sample in monitor simply. Also hologram interacts by moving of hand and is edited easily and is attached in shape of hologram in human body. Spectacles giving these scenes are divided two things and can be analyzed. First, this movie materialize 3D cubic image through hologram. The scene realized by cubic image in first monitor screen can freshly approach to audience as being realized for technique in imagination. This freshness cannot be cut to imagination of audience simply and it can be felt proxy satisfaction seeing what realized visually in movie. Second, graphic realized in 3D cubic image can interact with human. Scenes such as controlling hologram image by gesture only without using tools like keyboard and mouse, attaching hologram to one’s arm give spectacles of technology. This appeared in the scene of the “Minority Report (2002)” as the shape realized most for intuitive interaction among computers and shows the effect speedily in a short moment.

![Figure 6. “Iron Man 2 (2010)"

GUI ran to monitor in the “Iron man 2 (2010)”. By the reason of succeeding in box-office for the iron man, it appeared more GUI of augmented reality and interface of augmented reality being able to recognize visually with utilizing special tools appeared like seeing in eyes without utilizing special tools. Even scenes available to expand, shrink, delete, change appear much in whole movie. The iron man gives spectacle exceeding the former movie it can be analyzed in three partitions. First, GUI generates spectacle through sudden expansion in minimalized size. Audience is pressed by the size and can feel new spectacles. Second, character in movie gives the point of view surrounded in GUI. Generally GUI limited to one direction and can control and obtain all
information by watching monitors of right front. But audiences can check entire information through watching by degree of angle 360 in the “Iron man 2”. This suggested differences of interface in reality and movie through size and turning view stated before. The point of view different from before naturally gives mysterious experience to audience. Third, it utilizes more active gesture. It utilizes a various gestures in the “Iron man 2” if the gesture in extent of operating simply in the former movie. For examples, it shows the scene throwing balls and scoring a graphic goal, deleting objects through trashing gesture and so on. This gesture was applied gestures using much in daily life to realize interface and tries to like being realized real object and situation. Gesture for controlling floating graphic factors looks like being advanced one step in scene utilized in the former and the “Minority Report”. At the end variation of colors in graphic factors helps artistic factors of movie adding splendor of objects. Especially the scene distinguishing layers of maps from colors is the aspect hologram maps realized in auto cad and it can be the example giving pleasures with experiencing the differences reproduced real maps and images to audience.

4.2 GUI with Mise-en-Scene

Audience understands current situation along with figuring out movie flow through the images contained in each scene. GUI is also such a component, playing certain role of narrative development in a movie. This supports the assertion that computer graphics should be regarded as one movie component because they provide experience of spectacular scenes. To illustrate, a few movie scenes are suggested as examples. GUI in movies is not just for spectacular scene experience, but it can also be understood as Mise-en-Scene.

In a leading character's workroom where Iron man was born, many monitors are installed, and various types of GUI can be found in each screen. Along with other equipment in this space, GUI confirms that this space is for ironman suit development. Development documents, model diagrams, modeling displays, and others are suggested simultaneously in the screen. This type of GUI is the type of graphic image that cannot be experienced generally, and creates visual experience with cutting edge technology. With graphic component shown as hologram form around the character developing ironman suit, it not only implies that he is developing the suit, but also provides visual satisfaction to audiences using new technology.

It is man's image that is noticeable in a later scene when a woman appears above scene. Without man's image, it is difficult for audience to imagine what later scene tries to tell. It is meaningful in that man's images help infer what the monitors utilized in background refer to, and GUI's role helps keep the concentration of audience. Through huge screen, it can be known that the space woman belongs to be for tracing the man in the picture. As audience already knew the woman was chasing suspect through previous scene, it can be determined what screen-printing suspect's picture means, and what space the woman is in. GUI plays a role of explaining the situation of the movie.
4.3 GUI with Human Expansion

Through effects of new technology, movie provides audience with spectacular scene experience that has never been felt before. New technology becomes new media, and "media simulates operation image as if demonstrating human expansion" as McLuhan said. New technology mainly implemented through computer graphic, is nothing less than trickery, but visualized as concrete form to help audience recognize imaginary technology as real. Audiences feel more satisfied when identifying themselves with leading character in movies. HMD (Head Mounted Display) was developed by Ivan Edward Sutherland in 1968. About forty years later, it is shown as advanced form through Iron Man series. This movie shows information gathering stage by mixing real and virtual data, and through real time interaction. Man character wears self-developed suit and augmented reality is implemented through the display attached on mask. Considering feature of augmented reality that value environment composition focusing on improving sense of presence, iron man's mask appeared in the movie is appropriate for implementing augmented reality.

![Figure 10. “Iron Man 1 (2008)”](image)

The screen iron man looks at, is the world of augmented reality that real and virtual space co-exist. In this screen, objects in far distance can be seen by enlarging beyond visual ability human has, and topography structure can be seen through. Also, through ubiquitous environment, real time information can be transmitted to and from, and targeting at only intended object to eliminate enemy with hostages becomes possible. Even in combined form of virtual and real space, computer graphics are utilized to provide information. GUI shown through mask is controlled by voice input, traces pupils and displays proper visual feedbacks.

4.3 GUI with decorative function

Situation room space in wartime appeared frequently in the movie is always full of high-tech equipment, and shows many input-output devices. As war situation room developed at the time of the Second World War, was utilized in the movie, this space shows the trait of hyper mediation with cutting edge technology. For audiences to understand the space with this style, detailed elements comprising of space should be shown more realistically or in that degree at the minimum. For instance, necessary components comprising of monitor screen placed in space should not be too different from existing notion, and should include non-mediation elements in the level that assumption of information is possible.

In this space set to ever busy situation, numerous monitors are installed, and even though one does not know what it is exactly, text related to situation, images, and icons are displayed constantly. Audiences assume and interpret the contents displayed in monitor through the split moment of observation according to entire movie flow. Even though it is not clear what information screen carries, sometimes, audiences can guess the meaning through images, icons, and the familiar layouts. Information on monitor screen was switched very quickly, or disappears by switching screen and panning, as if it tries to draw audiences' distributed concentration. Core part of graphic components consisting of screen, is naturally the image. Particularly, image-utilizing cliché helps audience determine trait of unfamiliar space, and provides realistic sense. These images mainly include portraits, maps, three-dimensional pictures, charts, and others. Small components are difficult to figure out of what they are, and if audiences are not paying attention, they mostly pass by.

With decorative functions of interface in the movies maximized, there is improper use of interfaces. Screen below is one scene from movie “Mission Impossible 3: Ghost Protocol”. In this movie, Tom Cruise receives spy mission through portable video player disguised as disposable camera. Video image shown from the device includes graphical elements such as icons, windows, scrollbar, and others for interaction. These components create illusion as if audiences can control information by touching and clicking on camera video. However, this provides only one-sided information, and there is no indication.
of interaction between interface of the video and character in the movie. In a sense that no method was suggested to control icons that can be recognized as folder navigation, copy, multi-window, minimizing and maximizing icons showing in this movie, it may be seen as utilized for decorative effect. To prevent from playing the video again after information was provided, it was even set up to explode automatically five seconds after completion of playing.

Portable device in the movie is the output device providing information, and the monitor output video in detail from HCI point of view. Though iris data is received for identification, there is still no direct interaction with information. Even though information details delivered by portable device do not need interaction, components recognized as GUI were inserted, and realistic spectacles are realized from motions of graphic components. Each GUI component changes into graphic composing the screen, and provides sequential information by moving, enlarging, and creating for audiences to have new technical experience. As extra becomes possible as only a component in screen, regardless of movie story flow, GUI is in charge of decorative function on screen. Like spectacle is provided through computer graphic, GUI is the computer graphic image utilized simply for visual effect.

5. Conclusion
In this research, types and roles of GUI appearing in the movies are reviewed through many case examples. In order to do so, this research reviews examples, utilized by film companies, which aimed at successful performance by providing spectacle experience as well as discussing the feasibility of GUI emergence. With the digital emergence, technology required interface bridging human and computer, and the visualized form of interface became GUI. Thus, reviewing GUI can be one method to discover new technology.

GUI's role in the movies can be divided into four types. First, it is a role to provide spectacle experience to audiences as digital technology was presented in the movie for the first time. This strategy is still valid, and it is proven that it helps successful performance if becoming effectively specific. Second, GUI is integrated into movie as one component, and composed of Mise-en-Scene. In addition to providing spectacles, GUI started to play a role of device inducing concentration into movie. It helps audiences concentrate on a movie, which makes appearing character or the space plausible.

Third, GUI expands characters' abilities. As characters are fictional, whether corresponding ability is real or not is an important issue, and if practicality is assured, all imaginable things become real. Therefore, GUI is one of appearing components, in order to make characters' abilities appearing in the movie, realistic and concrete. As a matter of fact, characters are surrounded by cutting edge technologies, and use such technology to detect enemies' information, and the major function is to attack enemies. So it creates illusion as if character's ability is enhanced based on character's controlling of technology, armed with excellent GUI.

Fourth, GUI functions as a decoration. It is assumed that GUI aims at interaction between humans and computers. However, with GUI utilized as movie device, it lost its original function and occasionally is used simply as decoration elements. Of course, there may be intention to reflect the latest movie trend by using cutting edge graphical effects. Still, lack of understanding may be a cause or it can be due to decorative function that is not important. In a sense that interactions appearing even in reality, are shown as if it is implemented in the future, it can be determined that GUI is simply used to draw more attention from audiences.

Even though this research has split GUI's role into four types, this analysis may not be enough.
Especially, as intention of movie making cannot
match up to emotional aspects audiences accept,
there could be a problem of subjective
interpretation. With all these reasons, this study
will contribute that a variety of viewpoint analysis
will come out in terms of digital technology
utilized in movies in coming years.
Lastly, there are concerns that flashy visuals
appearing in Hollywood blockbuster level movie
series can over shadow contents of the movie. As
many critics pointed out, with the emergence of
first illusionism, it coincides with the phenomenon
that decorative elements only for visual
amusements, not a real narrative, take up main
stream. Numerous images shown within movie
running time are in the same context with images
consumed quickly in modern society. These
images are continuously produced, so audiences'
sense becomes dull, poor plot is forgotten, and
audiences want shorter and stronger shocks. Of
particular concern is that if this is window-
dressing style production of series of new
technologies to meet audiences' requirements,
which is fresh and exciting each time. There are
many researches to be conducted, including
whether unnecessary visual images are
overflowing in the movie, spectacles in movie
overshadow narrative, and paralysis, intoxicate the
reasons, and how to use GUI properly should be
discussed, and others.

References
1. Andrew Darley, "Visual Digital Culture Surface Play
and Spectacle in New Media Genre", Routledge,
Translated by Joohwan Kim, Hyunsil Cultural Studies,
2000, pp.136-137.
2. Pyoung-kuk Jeon, Hyeung-doo Kim, "Variation of the
Cinema and Techniques of the Expression in the
Digital Technology", The Korea Contents Association,
3. McNamara B., "Introduction and The Scenography of
Popular Entertainment", The Drama Review: Popular
Entertainments 18, 1: 3-4, recited by Andrew Darley,
"Visual Digital Culture Surface Play and Spectacle in
New Media Genre", Routledge, p.55.
Film and the (In)credible Spectator", Art and Text 34:
31-45, 1989, recited by Andrew Darley, "Visual Digital
Culture Surface Play and Spectacle in New Media
Genre", p.64.
5. Andrew Darley, Ibid., p.5.
6. Jae-cheol Moon, "A Study on the Relationship between
Narrative and Spectacle in Contemporary Cinema",
The Korean Association of Literature and Film,
7. Burkhard Roweckamp, "Hollywood", Köln : DuMont,
cop. 2003, Translated by Hye-kyung Jang, pp.121-122.
Spielmann, Gundolf Winter(Hrsg.), Bild-Medium-
Kunst, Munchen, 1999, S. p.107. recited by Hea-ryun
Shim, "Aesthetics on Cyber Space Period", Sallim,
2006, p.61.
10. Andrew Darley, Ibid., pp.136.
15. Oliver Grau, Virtuelle Kunst in Geschichte und
Gegenwart. Visuelle Strategien, 2. Auflag, Bonn, 2002,
S. 183. recited by Hea-ryun Shim, "Aesthetics on
Cyber Space Period", Sallim, 2006, p.78.