

Computers will be Surely Compatible with the Human form in form of Digital Jewellery

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Abstract

Digital jewellery is the fashion jewellery with embedded intelligence. "Digital jewellery" can help you solve problems like forgotten passwords and security badges. "Digital jewellery" is a recent catchphrase for wearable ID devices that contain personal information like passwords, identification, and account information.

They have the potential to be all-in-one replacements for your driver's license, key chain, business cards, credit cards, health insurance card, corporate security badge, and loose cash. They can also solve a common dilemma of today's wired world - the forgotten password.

Mobile computing is beginning to break the chains that tie us to our desks, but many of today's mobile devices can still be a bit awkward to carry around. In the next age of computing, there will be an explosion of computer parts across our bodies, rather than across our desktops. Jewellery is worn for many reasons – for aesthetics, to impress others, or as a symbol of affiliation or commitment. Basically, jewellery adorns the body and has a very little practical purpose. The combination of microcomputer devices and increasing computer power has allowed several companies to begin producing fashion jewellery with embedded intelligence i.e. Digital jewellery.

INTRODUCTION

By the end of the decade, we could be wearing our computers instead of sitting in front of them. See more pictures of essential gadgets.

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Jewellery is worn for many reasons -- for aesthetics, to impress others, or as a symbol of affiliation or commitment. Basically, jewellery adorns the body, and has very little practical purpose. However, researchers are looking to change the way we think about the beads and bobbles we wear. In the next wave of mobile computing devices, our jewellery might double as our cell phones, personal digital assistants (PDAs) and GPS receivers.

The combination of shrinking computer devices and increasing computer power has allowed several companies to begin producing fashion jewellery with embedded intelligence. Today, manufacturers can place millions of transistors on a microchip, which can be used to make small devices that store tons of digital data. Researchers have already created an array of digital-jewellery prototypes. "We've made one of

almost everything except tongue rings," says Dan Russell, senior manager of IBM's Alma den Research Lab, where IBM is developing digital-jewellery technology.

OBJECTIVES

Soon, cell phones will take a totally new form, appearing to have no form at all. Instead of one single device, cell phones will be broken up into their basic components and packaged as various pieces of digital jewellery. Each piece of jewellery will contain a fraction of the components found in a conventional mobile phone. Together, the digital-jewellery cell phone should work just like a conventional cell phone.

The various components that are inside a cell phone:

Microphone, Receiver, Touch pad, Display, Circuit board, Antenna, and Battery.

IBM has developed a prototype of a cell phone that consists of several pieces of digital jewellery that will work together wirelessly, possibly with Blue tooth wireless technology, to perform the functions of the above components.

Digital Jewellery

Cell phones may one day be comprised of digital accessories that work together through wireless connections.

Here are the pieces of computerized-jewellery phone and their functions:

- **Earrings** - Speakers embedded into these earrings will be the phone's receiver.
- **Necklace** - Users will talk into the necklace's embedded microphone.
- **Ring** - Perhaps the most interesting piece of the phone, this "magic decoder ring" is equipped with light-emitting diodes (LEDs) that flash to indicate an incoming call. It can also be programmed to flash different colours to identify a particular caller or indicate the importance of a call.
- **Bracelet** - Equipped with a video graphics array (VGA) display, this wrist display could also be used as a caller identifier that flashes the name and phone number of the caller.

With a jewellery phone, the keypad and dialling function could be integrated into the bracelet, or else dumped altogether -- it's likely that voice-recognition software will be used to make calls, a capability that is already commonplace in many of today's cell phones. Simply say the name of the person you want to call and the phone will dial that person. IBM is also working on a miniature rechargeable battery to power these components.

DESCRIPTION

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The same ring that flashes for phone calls could also inform you that e-mail is piling up in your inbox. This flashing alert could also indicate the urgency of the e-mail.

The mouse-ring that IBM is developing will use the company's Track Point technology to wirelessly move the cursor on a computer-monitor display. (Track Point is the little button embedded in the keyboard of some laptops). IBM Researchers have transferred TrackPoint technology to a ring, which looks something like a black-pearl ring. On top of the ring is a little black ball that users will swivel to move the cursor, in the same way that the TrackPoint button on a laptop is used.

This Track Point ring will be very valuable when monitors shrink to the size of watch face. In the coming age of ubiquitous computing, displays will no longer be tied to desktops or wall screens. Instead, you'll wear the display like a pair of sunglasses or a bracelet. Researchers are overcoming several obstacles facing these new wearable displays, the most important of which is the readability of information displayed on these tiny devices.

Prototype bracelet display developed by IBM

Charmed Technology is already marketing its digital jewellery, including a futuristic-looking eyepiece display. The eyepiece is the display component of the company's Charmed Communicator, a wearable, wireless, broadband-Internet device that can be controlled by voice, pen or handheld keypad. The Communicator can be used as an MP3 player, video player and cell phone. The Communicator runs on the company's Linux-based operating system.

TECHNICAL SPECIFICATIONS OF DIGITAL JEWELRY:

Digital jewellery devices consist of a screen or display for information, most likely consisting of 7-16-segment, or dot matrix LEDs, LCDs, or other technologies such as electroluminescent material (EL) or others, which could become an optional display. So too, an audiovisual or other 'display' could consist of a speaker, a single flashing light, a sensor of some kind (such as a temperature driven EL display), or other informational aesthetic. The display layer sits on a face of the device, which is enclosed in some material such as plastic, metal, crystal, or other material. It has external switches and buttons on its side and a data-port for accessing the programmable electronic circuit inside. A micro controller that is a surface mounted device (SMD) on a printed circuit board (PCB) with resistors (R) and capacitors (C) are the internal 'guts' of the jewellery.

DISPLAY TECHNOLOGIES:

The digital jewellery display, for instance, every alphabet and number system has found representation within the electronics realm and 'dot-matrix' (a matrix of single LEDs) is used to display Chinese and Japanese and other character sets, as can the alternative display for LCDs (liquid-crystal-displays) also be used, as often found in watches.

Digital Jewellery can be made in many different sizes and shapes with a variety of materials ranging from plastic and metal to rubber and glass. They utilize electromagnetic properties and electronics to display information through a screen or display of some kind. This could range from LED 7-segment, 16-segment, dot matrix, and other programmable LEDs devices to LCDs, OLEDs, and other displays, which are all driven by the self-contained jewellery devices themselves.

!. Garnet-Ring:



The picture shown above is a ring containing a microprocessor. It vibrates to let you know that you have received a message from someone.

2. The Java Ring:

It seems that everything we access today is under lock and key. Even the devices we use are protected by passwords. It can be frustrating trying to keep with all of the passwords and keys needed to access any door or computer program. Dallas Semiconductor is developing a new Java-based, computerized ring that will automatically unlock doors and log on to computers.



JAVA RING

The Java Ring, first introduced at Java One Conference, has been tested at Celebration School, an innovative K-12 school just outside Orlando, FL. The rings given to students are programmed with Java applets that communicate with host applications on networked systems. Applets are small applications that are designed to be run within another application. The Java Ring is snapped into a reader, called a Blue Dot receptor, to allow communication between a host system and the Java Ring. The Java Ring is a stainless-steel ring, 16-millimeters (0.6 inches) in diameter, which houses a 1-million-transistor processor, called a button. The ring has 134 KB of RAM, 32 KB of ROM, a real-time clock and a Java virtual machine, which is a piece of software that recognizes the Java language and translates it for the user's computer system.

ELECTROMAGNETIC BEADS:

The closest comparison to this model is that of 'beads' which are strung together to make a custom necklace or bracelet, with interchangeable electromagnetic component systems or devices. One bead may be a capacitor on the inside, and a solar panel on the outside. Another bead may have an internal resistor which feed power into a programmed microcontroller bead which drives an external screen, with other options available in a variety of bead configurations which compose a circuit, including beads with a piezo element, voltage regulator, crystal, or rechargeable battery as part of the modular jewel circuit. The number of data pins on the microcontroller needs to be enough to easily program the display layer plus the switches without overly complex and advanced coding methods.



Impact and quantitative analysis

The digital jewellery can be explained as wireless and wearable computers that permit us to exchange information through the ways like e-mail, voicemail and communication through voice. All the things that we use in the present days are under locked and keyed; even the machines we use are secured with the passwords and sometimes with the system or method of this passwords people gets irritated and the context of digital jewellery explains about the modern java based digital jewellery that

will automatically do the protecting functions right from the sign in/log in to sign out/log out.

The modern computer craze permits the people to wear the wireless computers and the computer fashion wave or fashion trend i.e. digital jewellery seems to be the coming or future fashion trend of technological wave. The combination of shrinking computer machines and enhancing computer power has permitted many companies to start generating fashion jewellery with integrated intelligence. At present the producers are placing millions of transistors on a single micro chip and this can be used to make tiny machines that save tons of digital information.

The concept behind the digital jewellery is to exchange information with others through wireless appliances and also to be stylish at the same time. With the development in the digital jewellery at the end of the decade people will be wearing the computers instead on sitting in front of them. The digital jewellery is fashionable jewellery with integrated intelligences and it can aid the people in solving the issues like forgotten passwords and protection badges. They have the power to be all-in-one replacement from the people driving license, credit cards and to the loose cash.

CONCLUSION

The use of wearable devices has been growing enormously in today's world. When you compare the size of electronics devices today with that of what it was ten years back, you can think about the kind of advancements happened in the world of technology. It may happen that by the end of the decade, we could be wearing our computers instead of sitting in front of them. Digital jewellery, designed to supplement the personal computer, will be the evolution in digital technology that makes computer elements entirely compatible with the human form.

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