BYTE QUEST

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Contents:

Byte Quest is the article published by the CSE dept of Vasavi College of Engineering regarding the latest innovative Technologies and Software that have been emerged in the competitive world. The motto of this article is to update the people regarding the improvement in technology. The article is designed by the active participation of students under the guidance of faculty coordinators.

 Good, bad or indifferent if you are not investing in new technology, you are going to be left behind.

-Philip Green

 Once a new technology rolls over you, if you're not part of the steamroller, you're part of the road.

-Stewart Brand

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AMBIENT INTELLIGENCE

Ambient intelligence is an emerging discipline that brings intelligence to our everyday environments and makes those environments sensitive to us. Ambient intelligence (AmI) research builds upon advances in sensors and sensor networks, pervasive computing, and artificial intelligence. Because these contributing fields have experienced tremendous growth in the last few years, AmI research has strengthened and expanded. Because AmI research is maturing, the resulting technologies promise to revolutionize daily human life by making people's surroundings flexible and adaptive.

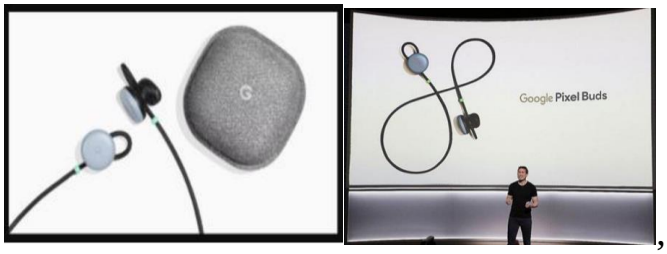
Like Apple bringing the smartphone to mainstream consumers, Amazon has brought an ambient-aware smart home assistant to the mass market. It successfully introduced the voice controlled assistant Alexa in 2014, despite being years behind Google and Apple in natural language and voice technologies.

AmI is one of the emerging technologies right now and is believed to replace and also improve the existing technologies like AI. However, AmI still needs to gain the trust and the confidence of the public. Nevertheless, people are starting to enjoy the benefits of AmI offered by applications like ambient-aware smart home assistants. Gradually, the usage model will affect many aspects of our lives.

SAMEER (CSE-B 2/4)

BABEL FISH EARBUDS

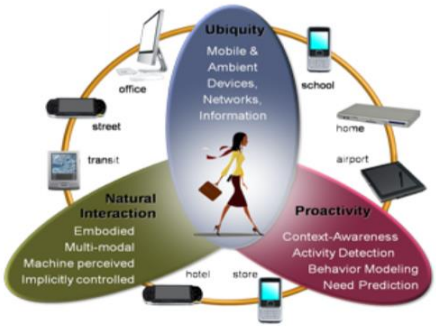
The Bable-Fish earbuds connect wirelessly with Google's latest smartphones. Through Google Assistant, the earbuds can translate 40 spoken languages nearly in real time or at least, fast enough to hold a conversation. The translation is currently processed on Google's AI-focused data-centres, because it takes a lot of processing power. Audio must be converted to text, translated into another language, and then turned back into speech and spoken to the listener. Guide to the Galaxy, bilingual communication was made easy by a small, friendly yellow creature called Babel fish. It could translate any language spoken in any galaxy. Scientists recently invented the world's first real-time translator, which could translate more than 40 languages. Waverly lab a start-up that



develops an earpiece language translator, launched its Pilot hardware which is supposedly the real-life alternative of Babel fish. Unlike other earbuds in the market, Pilot's earbuds are not tethered together. In fact, they are meant to be shared with another. Pilot does the inverse translation by listening the words and speaking them in the user's ear, which enables a real-time translation. Machine Learning and Artificial Intelligence are working behind the scene in making the system more intelligent.

VAGDEVI PALADI (CSE-B 2/4)

UBIQUITOUS COMPUTING



Ubiquitous computing is a method of enhancing computer use by making many computers available throughout the physical environment, but making them effectively invisible to the user. Background network to support ubiquitous computing is ubiquitous network by which users can enjoy network services whenever and wherever they want (home, office, outdoors). In this paper Issues related to ubiquitous network, smart objects and wide area ubiquitous Networks have been discussed. We also discuss various elements used in ubiquitous computing with the challenges in this computing environment. Ubiquitous Computing has potential applications in several sectors such as healthcare, Business processes, disaster management, farmland irrigation and empowering the common Man to improve the quality of life. Disappearing computer means the Functionalities of computers will be moved to the surroundings. As technology become more embedded and invisible, it calms our lives by removing the annoyances. Ubiquitous Communication is based on the concept of ubiquitous computing, where technology recedes into background of our lives to make human computer interaction much easier. They require efficient, multimedia and power-aware technologies linking together many Heterogeneous devices distributed over small or large specifications and pear-to- pear and ad hoc paradigms. Ubiquitous communications are intended to connect transmit/distribute the information among number of computing devices that form a ubiquitous network. In ubiquitous computing the new computing devices usually equipped with a selection of different sensors to collect data from their environment. The goal is to create context awareness, which allows intelligent things to decide and act on a decentralized basis. The new computing devices are mobile, and the tasks they are programmed to perform depend on the geographical location and neighbourhood of the devices. Ubiquitous computing means anywhere (at work, at home, in the city, in the country or on move), anytime (24 hours, day or night), anyone (adults or children, elderly or Handicapped), anything (home appliances, individual items, cars, food products). It needs numerous base stations (BS) in cellular system and access point (AP) in wireless local area network (WLAN), which cost more. Ad- hoc networking is expected to be one of the key technologies supporting a future ubiquitous network society. Ad hoc network consists of mobile nodes equipped with wireless transceiver, which aims to establish communication anywhere anytime without the aid of infrastructure like BS and APs. Ubiquitous network allows users to exchange information through the use of broadband and mobile access. Smart objects and RFID tags are connected through wide area ubiquitous network.

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