PROTOTYPE TECHNOLOGY

FOR FUTURE HCI

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**Automobile projection system**

Specialised devices, e.g., Navdy's transparent head-up display (HUD)[[44](http://html.rhhz.net/GJZDHYJSJZZ/20170102.htm?fbclid=IwAR0N050JEFgpn4DgOao1KEARKvnhN48ojA6Fogmt0UeZ_6ZPvhqoRsN45wM#b44)], are commercially available that can project useful information (e.g., navigation, emails, text messages, etc.) on the windshield of the area.

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| http://html.rhhz.net/GJZDHYJSJZZ/PIC/s/ijac-14-1-10-28.jpg |  |

**Heart attack predicting car seat**

Electrocardiograph (ECG) technology based sensor, camera, to detect a heart attack of the driver. The ECG sensors monitor the heart activity through the cloth of the driver. The camera is used to collect the position of the driver. Once a heart attack is detected, the system can take control of the car and bring it to safety autonomously[[47](http://html.rhhz.net/GJZDHYJSJZZ/20170102.htm?fbclid=IwAR0N050JEFgpn4DgOao1KEARKvnhN48ojA6Fogmt0UeZ_6ZPvhqoRsN45wM#b47)].

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| http://html.rhhz.net/GJZDHYJSJZZ/PIC/s/ijac-14-1-10-31.jpg |  |

**Safety suit for motor racing**

Accidents in motorcycle racing can cause severe or life-threatening injuries to the rider. To ensure the safety, several advanced technology based suits have been developed. For example, the D-air racing suit[..



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**Smart-phone** applications have been developed to evaluate driving skills of a driver and to generate feedback on journeys for safe driving. Such applications use various sensors, e.g., accelerometer, GPS location, of the smart-phone to record braking, acceleration, speeding, and habits of the driver.



**Baby monitors**

A number of smart devices are available to monitor baby activities allow parents to monitor baby's position, movement, body temperature, heart rate, oxygen level on a smart-phone or tablet in real time.

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| http://html.rhhz.net/GJZDHYJSJZZ/PIC/s/ijac-14-1-10-36.jpg |  |
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**Real-time natural language translation tools**

Many smart-phones are able to translate one language into another using translation tool. Recently, Google has developed a real-time translation tool based on images[[55](http://html.rhhz.net/GJZDHYJSJZZ/20170102.htm?fbclid=IwAR0N050JEFgpn4DgOao1KEARKvnhN48ojA6Fogmt0UeZ_6ZPvhqoRsN45wM#b55)] which is shown in [Fig. 37](http://html.rhhz.net/GJZDHYJSJZZ/20170102.htm?fbclid=IwAR0N050JEFgpn4DgOao1KEARKvnhN48ojA6Fogmt0UeZ_6ZPvhqoRsN45wM#Figure37) and supports a number of languages.

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| http://html.rhhz.net/GJZDHYJSJZZ/PIC/s/ijac-14-1-10-37.jpg |  |

**Habit changing wristband**

Technology can help us to get rid of bad habit as well. For example, the Pavlok, shown, can be programmed, e.g., visiting time-wasting websites, launching a maximum number of tabs in the browser, and it will generate an electric shock for the user to remind of bad habit[[56](http://html.rhhz.net/GJZDHYJSJZZ/20170102.htm?fbclid=IwAR0N050JEFgpn4DgOao1KEARKvnhN48ojA6Fogmt0UeZ_6ZPvhqoRsN45wM#b56)].

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| http://html.rhhz.net/GJZDHYJSJZZ/PIC/s/ijac-14-1-10-38.jpg |  |

**Brain signal capturing headset**

A brain signal capturing headset is able to detect the changes in voltage when the human brain neurons are working on a thought. The headset normally carries a number of electrodes or sensors that are attached to the human scalp to record the electroencephalographic (EEG) signals and then these signals can be converted into a digital form that can be processed by a computer[[9](http://html.rhhz.net/GJZDHYJSJZZ/20170102.htm?fbclid=IwAR0N050JEFgpn4DgOao1KEARKvnhN48ojA6Fogmt0UeZ_6ZPvhqoRsN45wM#b9)



**Google Cardboard**

Google Cardboard[[19](http://html.rhhz.net/GJZDHYJSJZZ/20170102.htm?fbclid=IwAR0N050JEFgpn4DgOao1KEARKvnhN48ojA6Fogmt0UeZ_6ZPvhqoRsN45wM#b19)] allows users to build a very low-cost headset to experience virtual reality using smart-phones As the name suggests, the Google Cardboard comes with cardboard, lenses, straps, etc. The smart-phone needs to run a special application to create the stereoscopic view for both eyes. Various smart-phones, e.g., Apple iPhone, Google/LG Nexus, HTC Sensation, Huawei Ascend, LG G2, Optimus, Samsung Galaxy, Sony Xperia, are compatible to Google Cardboard.

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**Smart glass**

Smart glass, e.g., Google glass is a smart-phone-like hands-free device that is able to take voice commands It is a heads-up display (HUD) equipped with a camera, microphone, and GPS, and can perform various tasks, e.g., taking and viewing pictures, online searching, reading emails, satellite navigation, taking and making calls,

