Department of Electronics & Communication Engineering

"Utkarsh-2024"

Technical Exhibition

Projects Details

Sr. No.	Project Name	Students Name	Year	Date
1	USB Rubber Ducky2.0	Chhavi Dudeja	4th	15.03.24
2	Sonar Glove: Giving Sonar to the blind	Viraj Khanna	4th	15.03.24
3	Waste Segregation System	Yash Singh	4th	15.03.24
4	Smart Agriculture system	Kanav	4th	15.03.24
5	Pet Feeding and Weather monitoring system	Aashish Rawat	4th	15.03.24
6	IOT-based Health Monitoring system	Aditya Tyagi	4th	15.03.24
7	IOT-enabled EV charger	Anmol Mishra. Nitika Maini	4th	15.03.24
8	Blind Man Assist Helmet	Aman Nagar	4th	15.03.24
9	Home Automation system	Mohd Adeel, Parnav Jastora	2nd	15.03.24
10	IoT based pollution control system	Bharat Nargotra Rohan	2nd	15.03.24

USB Rubber Ducky2.0

Chhavi Dudeja (01196202820/F-15)

Overview: An attack in the form of retrieval of Google Chrome browser login data in Windows operating systems using Raspberry Pi Pico devices as USB Password Stealers, also giving administrative access to the attacker. This mechanism allows the attacker to connect to the target computer using a USB Human Interface Device (HID) in the form of a keyboard and then retrieve the username and password stored in the browser from the target computer using the Chrome Password Decrypted program through Command Prompt (CMD) and PowerShell. After the attacker gets persistent administrative access, he/she can retrieve decrypted chrome passwords. This project uses various tools and technologies such as Raspberry Pi Pico, Ducky Script, Python, Adafruit library, GitHub, and Circuit Python. At the end of the study, recommendations are also provided for prevention regarding this attack.

CONCLUSION:

If your user account is not in the Administrator group, it will make it harder for a Rubber Ducky to operate. The weakness of the Rubber Ducky is running pre-created scripts (payloads), and most of them are meant for accounts like most Windows PCs in the Administrator group. In a limited account, you will need to enter the Administrator credentials to do certain actions (i.e., change a Registry value) or run certain programs, and without these credentials, the Rubber Ducky won't be able to proceed.

Sonar Glove: Giving Sonar to the blind

Viraj Khanna (08815602820/F5)

Introduction:

The integration of sonar technology into wearable devices opens up new possibilities for navigating and interacting with the world.

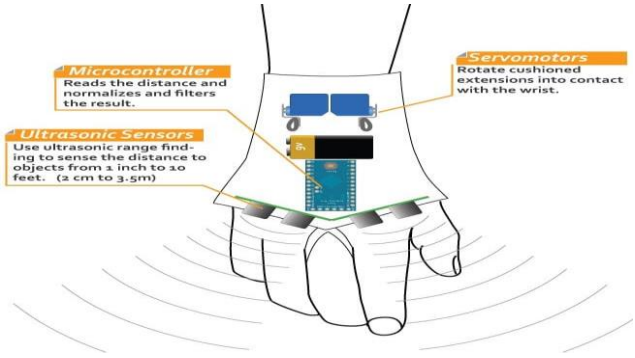
By deploying ultrasound waves and analyzing their reflections, these wrist-mounted devices offer real-time spatial awareness, enabling users to detect obstacles and navigate their surroundings with increased independence.

Objectives:

- To implement sonar sensors to detect and measure distances to nearby objects accurately.
- To integrate tactile feedback mechanisms into a wrist-mounted device using Arduino.
- To integrate GPS functionality, allowing the device to provide precise navigation guidance.

Results and Output:

- **Design the overall system architecture, including the integration of sonar sensors and Arduino microcontrollers.**
- **Develop algorithms to translate object data into meaningful tactile feedback signal**
- **Assemble the hardware components into a prototype wrist-mounted device.**
- The tentative result of the project is a functional and wearable wrist-mounted device that combines sonar sensors and Arduino technology to provide accurate obstacle detection.
- The device, with an ergonomic design, aims to enhance navigation in various environments.



Conclusion:

A small, light, and portable smart glove system for blind people is developed by using an ultrasonic sensor, a servo motor and the Neo 6m GPS module are the extra characteristics of this tool compared to the existing ETA for this group of people. These two indicators will operate simultaneously as the blind approach the obstacles in front of them. The designed system has been able to detect the object or obstacles up to 80cm long so that the early warning is informed to blind for their safety. The glove will also help the parents/guardians of the user to locate the wearer's location in case of an emergency.

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