Report on Behavioral Biometrics: Towards a Securer, Smarter and Healthier World

With new advances in biometric technology taking place each year, biometrics is one of the most exciting areas in STEM -- offering diverse working environments, flexible lifestyles, and countless opportunities for innovation

Keeping this in mind Team Cybernauts, the Tech Society of Department of Computer Science, Mata Sundri College for Women organized an interactive Research Talk on the topic Behavioral Biometrics: Towards a Securer, Smarter and Healthier World by Dr. Rajesh Kumar.

The session was scheduled for 26 August 2021 at 5 pm on Zoom. The program commenced with the welcome speech by **Ms. Darshpreet Kaur (Student Vice President, Cybernauts)** followed by speaker introduction **by Dr. Nidhi (Program Convenor) .** The registration for the program was 110+ but session was attended by 80 participants and was conducted under the able guidance of **Prof. (Dr.) Harpreet Kaur (Principal), Dr. Kiranjeet Sethi (Course Coordinator), Dr. Nidhi (Convener and Department Coordinator), Ms. Darshpreet Kaur (Student Vice-President, Cybernauts), and Team Cybernauts**.

The speaker covered all the important domains from what behavioral biometrics is and how students can start their journey in this field. He started off by explaining behavioral biometrics, its different types like kinesthetics (body movements), vocal patterns, and device-based gestures were discussed along with real-life examples. Further, he explained how biometrics provide better-than-password security to online accounts or personal hardware (like phones, tablets, or PCs).

The talk discussed the growing demand for securing online access via mobile devices and computers. Biometric forms of authentication are less vulnerable to fraud and hacking because of their secure, convenient protection and by identifying individuals with a much higher accuracy rate compared to passwords. Furthermore, biometrics can not be shared, forgotten, or transferred, whereas passwords can. Biometric security has a critical role to play in helping consumers and IT admins manage passwords, guard against wrongful access to sensitive devices, and reduce fraud and identity theft. Hence, it is now being used by law enforcement agencies and experts to fight **cybercrimes**. Once the user enrolls in the biometric system, there's only a digital representation of the biometric sample that gets stored as a template.

A biometric algorithm selects the distinctive characteristics of each fingerprint, encrypts this data, and saves it as a template. The original image can not be reconstructed or copied in any

way because it is a one-way algorithm ensuring the user's fingerprints will not get used for anything other than identification purposes.

The speaker also negotiated that the biometrics systems are not perfect yet. For one, it's time-consuming to capture the user's biometric information and confirm their identity. It is also costly to do so. One issue that has surfaced is the fingerprint scanners don't always recognize your prints if your hands have been sweating. Another problem is background noise interfering with voice recognition.

In addition to it, he shared interesting videos and graphics to support his points. He concluded the session by explaining how students can take this up as a career option and what their first step should be.

The session turned out to be very interactive as a lot of questions were asked by the audience. The speaker handled all the queries patiently. The session was finally concluded with a vote of thanks by **Ms. Twinkle Karki (Student Executive Member, Cybernauts)**. The overwhelming feedback provided by the participants marked the success of the session.