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SIT123: Data Capture Technologies

# Lab Work Week 5.1: Ethical issues (30 marks)

In this task you will investigate ethical concerns in a given a case study.

## Due Date Friday 5:00pm, 2nd September 2022

## Pre-requisites: You must do the following before this task

1. **Attend Class (Lecture) & Seminar**
2. **Completed previous Lab works**
3. **Read this sheet from top to bottom**

## Task Objective

Read the case studies given below and consider their ethical concerns.

**Case study 1:**

Consider the GPS data you collected and mapped previously. Now imagine your GPS traces were collected for a period of 30 days, and shared publicly with your name without your knowledge.

**Case study 2:**

Consider the context of some data collected using motion sensors. Here, data was collected from a motion sensor installed in a user’s (John Doe) bathroom. John Doe is an elderly gentleman between 65-75 years, and he lives by himself in his own home.

The data was part of John’s smart home system, which has motion sensors installed in every room. All the sensor data being collected from John’s house, including his bathroom is uploaded to a cloud server. The company who built the smart home system has access to John’s collected sensor data in the cloud, and their artificial intelligent algorithms use the collected data to learn about John’s behaviors and feed the learned patterns back to John’s smart home. John’s smart home uses these learned patterns to make various decisions such as automating lights, heating and if John is well (based on his activity). All of John’s data includes his name and address.

John himself does not have access to his data in the cloud.

## Task Submission Details

There are 5 questions in this task. Answer all of them in this word document itself and submit to unit site.

### **Q1: In case study 1, what should have been explained and obtained prior to sharing your GPS traces publicly? Why?**

(6 marks)

Being aware of potential threats and risks is essential. The potential benefits of the study must exceed any possible drawbacks, and individuals' rights to privacy, confidentiality, and ownership over their data must be safeguarded. The people whose data is utilised must be given clear, concise results of the research as soon as possible. In the end, research has to be carried out by people who are well trained.

### **Q2: What are some ethical concerns in case study 1?**

(6 marks)

They might be the target of a robbery attempt. Thieves will have a much easier time stealing from this individual because of how well they know their schedule and location. The individual's right to privacy will be violated since his past movements may be tracked by anybody with access to the data. Because of, say, his job schedule, he is unable to return home at a certain time. For fear of discrimination or harassment, many individuals are reluctant to discuss their favourite hangouts. Participating in group activities like as

### **Q3: What are some ethical concerns in case study 2?**

(6 marks)

Concerns about John's privacy may be high on the list if his information is shared without his knowledge or consent. Any number of items, including but not limited to medical equipment and medications, may be marketed to John if a corporation were to acquire his personal information and utilise it for such purposes. •The smart home checks in on the john to make sure he's okay, but if something goes wrong—like a fault in the system—it may needlessly alert emergency services, which could be a waste of time and money. The researchers may use John's regular routine without his awareness (when he sleeps, where he goes, how often he eats, etc.) •If a hacker or criminal obtains John's information, he might be in deep difficulty, including financial loss.

### **Q4: What adverse effects may arise as a result of the aforementioned ethical concern/s? Explain using examples.**

(6 marks)

Moral problems may have far-reaching effects. Theft or damage to personal property is the worst consequence. People's everyday actions, such as when they sleep, eat, and go out, are scrupulously recorded. If this information gets out, the victim might face physical violence, theft, or both. Newer Roomba vacuums record data while cleaning, including wall and furniture placements, and transmit it to Amazon, Apple, and Google. Data is the new oil due of its tremendous worth. Many large firms are gathering petabytes of data to use internally or sell for advertising. Target sent discounts to a pregnant lady, who subsequently told her father. Technology uses our habits and routines. Amazon's AI predicts consumers' wants and ships products before they buy.

### **Q5: Explain how one of the ethical concerns you mentioned can be addressed.**

(6 marks)

Data theft is easy and anybody can do it, therefore it's crucial to utilise simple, effective measures to secure our data. It's important to recognise anybody or anything trying to access our technological gadgets. To prevent this, we may incorporate multi-factor authentication and an instant notice to our phone or phone if someone tries to utilise our location, camera, or other functions. Only a rigors background check on every employee and home user can ensure sensitive information isn't exploited. Determine whether the user's behaviours threaten our data and are dangerous. Third, we must increase our expertise of data management. Training the cyber staff on phishing scam may help everyone. A single individual may modify well-defined procedures and circumstances to prevent data breaches and the theft and exploitation of sensitive information.