Ethical Issues and Emerging Technology in 21st Century with Web Design

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Information and communication technologies have made tremendous advancements during the last few decades. Web technologies are among the top technologies that have changed the way people do business (Sin & Muthu, 2015). Where the advancement in web design technologies has brought new horizons to other fields of science there are severe ethical issues as well. Emerging web technologies opened doors to sophisticated cyber-threats and privacy issues. Most of the businesses rely on web technologies for their online presence globally. Exponential penetration of web technologies in modern businesses has made them a potential target of cyber-criminals (Stoyanovich, Abiteboul, & Miklau, 2016). Ethical issues in emerging web design techniques include privacy issues, identity fraud, phishing, and spam messages. Privacy concerns are considered to be the most important ethical dilemmas in modern web technologies.

 Web designers and engineers across the globe are incorporating machine learning and artificial intelligence in web designs. Machine learning models are data-driven algorithms that require extensive amounts of information to be fed to the model before it can make autonomous decisions. There are severe ethical issues in combining artificial intelligence models with web technologies (Manca, Caviglione, & Raffaghelli, 2016). For example, in the case of a self-driving car, the car may be connected to some web resource to make autonomous decisions. In that case, the control to make the decision will not be in hand of the passenger but will be in control of the programmer. As a roadside accident may pose severe threats to the life of an innocent person, the control to make decisions must not be transferred to the programmer or artificial intelligence algorithm.

 On the other hand, web analytics engines are being used to harvest enormous amounts of data required to train machine learning models. Most of the time the data is collected without prior notice and contain personally identifiable information such as social security numbers, sexual orientation, and political views, etc. An ethical behavior will be to ask for permission before collecting such information. Websites designed using latest web technologies collect this type of information without the consent of the visitor of the website (Költringer & Dickinger, 2015). Other types of information being collected by such web technologies include user behavior while using the service. Such data cannot be used to personally identify an individual but may be considered as personal information in some cases. As per ethical values, the visitor must be informed about data collection, the nature of data being collected, and the purpose of data collection.

 Web engineers must make the technology transparent to the users of the technology as well. The user must have complete control of personal data being collected by such technologies. Similar ethical issues are being observed in digital assistant devices such as Google Assistant and Alexa. As these devices and web technologies used in them can be used for spying and recording personal conversations without informing the users (Witten, Frank, Hall, & Pal, 2016). Recently, some issues were reported with Alexa, where the gadget recorded the personal conversation and emailed it to acquaintances. The end users are not even able to know that where their data is being stored and most of the companies do not even provide with an option to delete the collected information (Mittelstadt, Allo, Taddeo, Wachter, & Floridi, 2016). With the introduction of GDPR in Europe, the things are expected to be changed as the regulation provide the user with more control of personal information. It is an individual’s right to known what type of information is being collected and how it is going to be processed. Without building the technologies in line with ethical values, it will be very difficult for engineers to maintain trust in such technologies.

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