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Neural Networks were designed to mimic its biological neuron networks counterpart. They are capable of learning patterns and recognizing relationships within the data in ways that are similar to the human brain. At its foundation neural networks are made from neurons which are essential as they are comparable with brain cells because they provide analogous duties. These neurons link up with other neurons to form a collection link. The neuron’s job consist of collecting inputs, processing the input, and generating an outcome. This system is arranged to have 3 distinctive layers. The input layers are the one who receives the data, next the hidden layer is the layer that processes the data, and the output layer produces the final prediction. The neurons in the system are customizable by adjusting the weights and balances so they can measure the strength of the input’s signal. Each node within the system has its own individual weight assigned so it can help with determining the importance of a given variable as the larger variables have a more significant impact on the outcome when compared to other inputs.

Neural networks were also designed to provide an abundance of end users experiences. They are featured in technologies such as facial recognition. This application uses neurons networks and apply the techniques on facial recognition tasks. They learn to recognize faces from enormous datasets that provides precise representation to enhance the performance in distinguishing different features in faces. This technology has provided major improvements in industries such as the security and surveillance sectors. The facial recognition technology has the capabilities of clearly identifying individuals when that person is in the camera’s sighting and will detect anyone who is currently in the system’s database. As a result customers that utilizes this technology can cut cost from retail stores having an extra layer of security to apprehend potential shop lifters to homeowners protecting their family from possible intruders. There are also very alarming ethical concerns with the facial recognition technology. This technology has been trained on bias data that has discriminated against people of color. For example law enforcement utilizes facial recognition to compare mugshot of criminals to mugshots stored within the data base and research has concluded that the technology has a divergent error rate that’s spread across different demographics with the most inaccurate group consists of African American women from ages 18-30.

The General Data Protection Regulation (GDPR) was created by the European Union to enforce laws and regulations that protect the personal data of citizens in Europe and abroad. The GDPR are known to have some of the strictest privacy and security laws in the world. The GDPR feature seven principles but we are going to talk about the four that’s most important. The first principal is transparency and it indicates that a company need to be clear and honest with people about how they are going to utilize their personnel information. Purpose limitations is the second principle of the GDPR. It states that companies must me clear about the purpose data and how is processed from the start. When that purpose is specified it can assist individuals with understanding the various ways their data is used and gives them the opportunity to make decisions on whether they are comfortable sharing the details of the data. Data minimization is the third principle of the GDPR. This principle is the process of how companies accumulate data for pre determined intentions and the companies cannot collect more data unless an authorized consent is granted. The fourth and final principle of the GDPR is Accuracy. Accuracy states that companies should take judicious steps to ensure that all personal data be as precise as possible. Companies are held accountable for keeping information up to date with current policies regarding possible changes.

The use of neural networks as a classifier can be accompanied by some legal concerns regarding the control of personal data. The European Commission instituted a rule in which companies have to now ask for consent to continue collecting information regarding the individual. With the implementation of this new law businesses could possibly lose a sizeable amount of subscribers with the customers who denied consent removed from the mailing list. This could catapult to a loss in revenue as the company’s potential customers are greatly reduced because of the enforced law. The businesses will also have to comply with the customers ability to institute the right to be forgotten. This means that when a shopper enable this right they will have the assurance from the company that the business clears their data from its system. The company will still be able to collect information from customers but only if they agree.

The European Commission has taken steps to protect consumers privacy with the inclusion of these new guidelines. Reducing algorithm bias in data will be an area that need to be addressed within machine learning and artificial intelligence. With the new laws the GDPR has instituted the data used in machine learning should become more diverse. With companies having to ask for consent certain demographics could be left out and vastly skewed the data. In order to prevent this from happening these algorithms needs to be trained on enormously diverse datasets. Companies also will have to review and update their data collection process to ensure the user granted consent before the data was collected. Vigorous security measurements will have to be taken to ensure there isn’t an unauthorized access. The data will also be limited to only its purpose and nothing else. The policies will be straightforward to communicate the privacy policies and their rights regarding their personal information. If the company doesn’t comply with these regulations the fine could be astronomical with most at about 20 million dollars.

Resources

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