A neural network is a system of layers of nodes that are all connected. Within the network, each node will hold its importance in what it does for the network. Depending on what the network is currently doing, the data within a node can be transferred to the next layer. Before the transference of data, the data will have to be learned by the network. This is done by utilizing training data. The amount of data that can be learned by AI can happen at a faster pace than that of a human.

The start of the neural network would be the input layer. This would be the first layer that data would go through. After the input layer is finished with the data, it will then transfer the data to the next layer. Depending on the network, there may or may not be a Hidden Layer. If there is a Hidden Layer, that would be the next layer the data would go to. In some ways, the Hidden Layer is the most important. Though it can’t work on its own, it performs more actions that control the network's overall performance. The Output Layer is the final layer through which the data goes. This layer will receive the final output(answers) to the training that the network received. An example of what this means is that after reading a set of training data, it can receive an object with the input layer, move through the hidden layers to differentiate what the object is based on the previous training data, and then provide an answer to what the object is via the output layer. In simplest terms, a question would go in one end of the network, and the answer would spit out the other.

For personalization purposes with our company, we use neural networks to gather information about the users' interests based on what they click and show interest in our website. Based on this, we can provide the users with the best experience possible. Suppose the neural network receives information that the user continues to click on posts related to animals. In that case, we may recommend a popular group about animals that contains people with the same interests. Using the same algorithm, we can suggest things like people the user may know or games they may like to play based on their interests. Every click the user makes can give us more real-time information about what the user currently wants. We can take this information in real time to help make suggestions. We would clearly state that we would use it for predetermined suggestions, and not store the information for later use. It would also show the user that we will not utilize more data than needed.

Ethical concerns can arise if we do not inform the user how we use the data. We can mention all this in the terms and conditions notice for using our website. Doing so will allow the user to agree to what we stated is being done. Another ethical concern is accuracy. We will include a communication spot so that if something ends up being incorrect or wrong, we can notify the user and take immediate action to correct the issues. Though it's not something that seems like a big deal, we will also have to be careful of hidden biases. If we use the example above about the animals, the training that signifies what an animal is may only include mammals. If this is the case, even though our users love all animals, they will not be directed to animals like reptiles, birds, or fish. The system must be thorough in everything.

GDPR is a set of standards that must be legally followed. Doing so will ensure user privacy protection and reduce ethical concerns. Following GDPR guidelines, using an agreement allows us to personalize for them. Without our consent, it is still possible to navigate the website, but all output will be random. Personalization is what will increase the user’s experience. The terms of which the user agrees will not only show when a user goes to agree but can be found easily on the website at any time. It will continue to specify what it is doing to personalize for a user and outline exactly how and when the data will be used. We will validate that all user data stays private and secure. With consistent updates and maintenance, we will also be able to ensure the accuracy of the user’s data and what we display to the user.

Every user(person) has a right to their privacy. If that right is taken advantage of, legal action can be taken. Privacy includes not just personal information needed for the website but actions that the user may take on the website itself. We must only use data that is necessary and not more. We must only use the data as needed.

Not utilizing personal data from the user is always possible, though it will subtract personalization from the user's experience. Everything not explicitly searched for by the user will be displayed randomly on the website. This, in turn, may also display the opposite of the user’s interest and may persuade the user to turn to a different website. That is not what our goal is. We want to do what we can to show the user what they want to see. To do that, personalization using data is a must.

To stay in compliance with GDPR one of the best things we can do is emphasize how we will be using the user’s data. Using the terms and conditions mentioned earlier is a great way to express that. Another trend we will follow with GDPR is data security. To help against data being stored, the collected data is only used for immediate use. Therefore, that particular data cannot be resurfaced in any way. Data accuracy is another thing we must keep in mind. Watching for any possible hidden biases and implementing a fix right away is how we would take care of that.

**References**

Beysolow, T. (2019b). *Applied Reinforcement Learning with Python : With OpenAI Gym, Tensorflow, and Keras*. Apress L. P.

How GDPR can undermine personalization and user experience - business 2 Community. (n.d.). <https://www.business2community.com/customer-experience/how-gdpr-can-undermine-personalization-and-user-experience-02108269>

Lamba, A. (2018a, August 27). *A brief introduction to reinforcement learning*. Medium. <https://medium.com/free-code-camp/a-brief-introduction-to-reinforcement-learning-7799af5840db>

Ram, M., Pimcoremkt, & yash.mehta262. (2023, March 16). *3 ways AI is helping personalize customer experiences*. Datafloq. [https://datafloq.com/read/3-ways-ai-helping-personalize-customer-experiences/](https://datafloq.com/read/3-ways-ai-helping-personalize-customer-experiences/%20)

What is a neural network?. IBM. (2021a, October 6). <https://www.ibm.com/topics/neural-networks>