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Week 4 Quiz

Latest Submission Grade 100%

1. What advantage does Federated Learning give you? **1 / 1 point**

- ○ User data can remain private on their device but still be used to train models
- ○ Users can have models trained on everybody's data
- ○ Models can be frequently updated
- ◉ All of the above

Correct

2. What is the privacy principle of focused collection? **1 / 1 point**

- ○ Engineer filters all the data to get only what she needs for a calculation
- ○ Data is filtered by the network to remove all irrelevant data
- ◉ Devices report only the data needed for a specific computation
- ○ Devices filter all the data from the server to only use updates

Correct

3. What is secure aggregation? **1 / 1 point**

- ◉ Devices in a network pair up, and create obfuscation keys that get cancelled out when aggregated on the server
- ○ Data is aggregated on the device before sending to the server, and sent on an encrypted channel
- ○ Data is aggregated before being sent to the server, and only sent on encrypted channels
- ○ Devices in a network pair up, and aggregate mutual data before sending to the server

Correct

4. TensorFlow Federated includes a Federated Learning API, a Federated Core API and a runtime for simulations. What's the role of the Federated Learning API? **1 / 1 point**

- ○ It's designed to allow the expression of new Federated algorithms
- ○ It is a mobile runtime for Federated Learning
- ○ It is the API for everything Federated Learning
- ◉ It contains implementations of federated training that can be applied to existing tensorflow models and data

Correct

5. If you want to declare a federated type, where a numeric item of data is available across all your devices, how do you do it? **1 / 1 point**

- ○ You can't do this for privacy reasons, you have to declare it when submitting to the server
- ○ Each device needs the same variable name and type
- ◉ You declare the type as {float32}@clients
- ○ You declare the type as {float32}@server

Correct

6. If you want to do a federated computation on the server, what do you need to do to your computation function? **1 / 1 point**

- ○ Nothing, it will just work automatically
- ◉ Attribute the function with @tff.federated_computation

- Attribute the function with @tff.federated_computation
- Attribute the function with @federated
- Make sure it returns its value to @Clients

Correct

7. You want to return a mean value of client values, calculated on the server, back to the clients. How do you do this? **1 / 1 point**

- You have to use a tff.federated_mean to calculate the value and return its results
- You have to explicitly open a network pipe and send the value to all of the clients using it
- The return value from your function is automatically mapped to the clients
- You can't do this for privacy reasons

Correct

8. If you want to try the tensorflow federated APIs, how do you install them for Python? **1 / 1 point**

- Pip install tensorflow-federated
- Pip install tf-federated
- Do nothing, they're included in TensorFlow
- Pip install tensorflow_federated

Correct