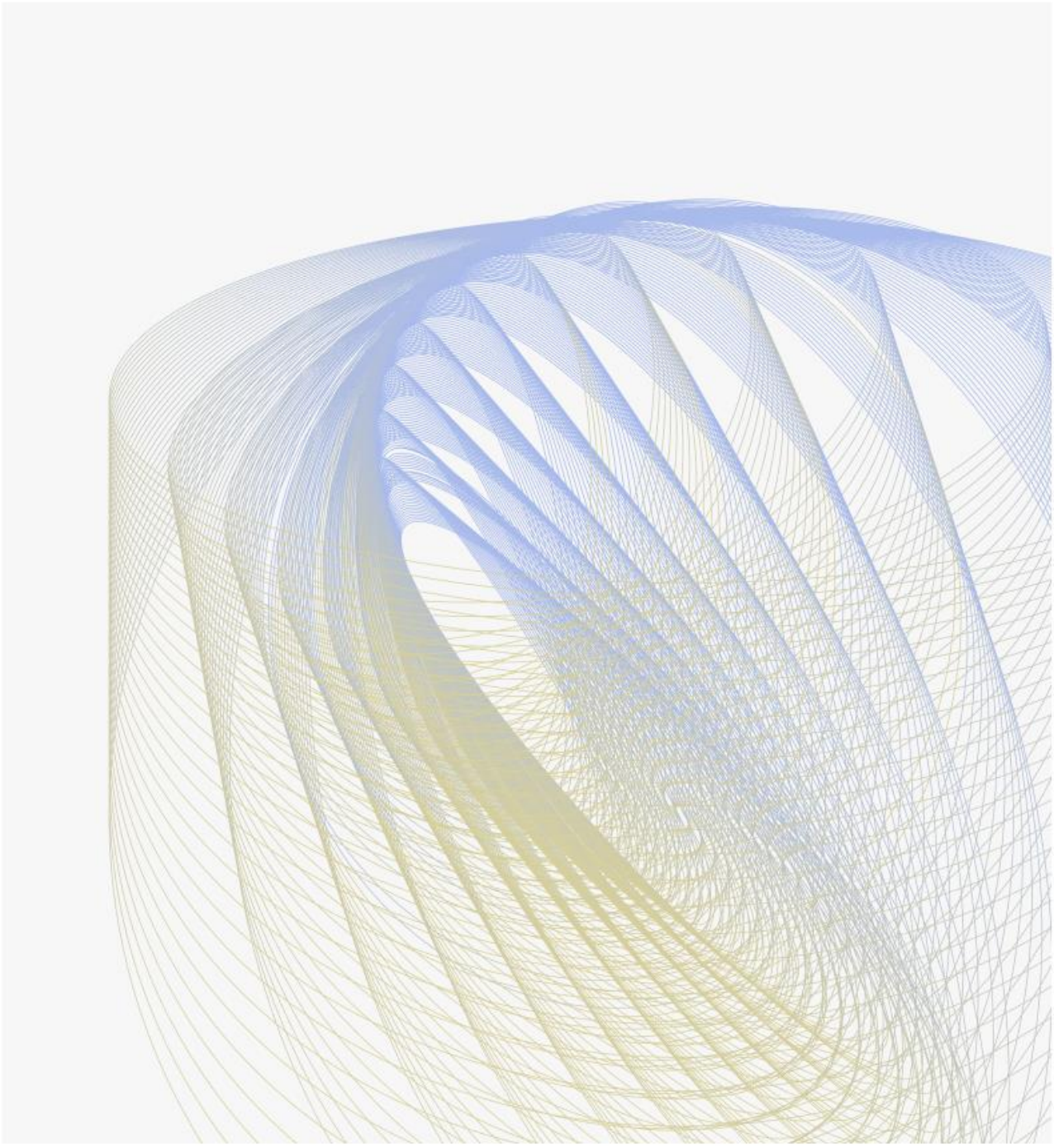
Univ. AI

AI Quizbook

2020 | Issue 1



Founded by Harvard Professors to bring you the world's best AI/ML training

Rahul Dave
Chief Scientist,
Univ.AI
Former Lecturer,
Harvard University

Pavlos Protopapas
Scientific Program
Director, IACS,
Harvard University

Achuta Kadambi
Asst. Prof. UCLA
PhD, MIT Media Lab

All Programs Live! Online

Elite Faculty from Top Universities

Cutting-Edge Curriculum

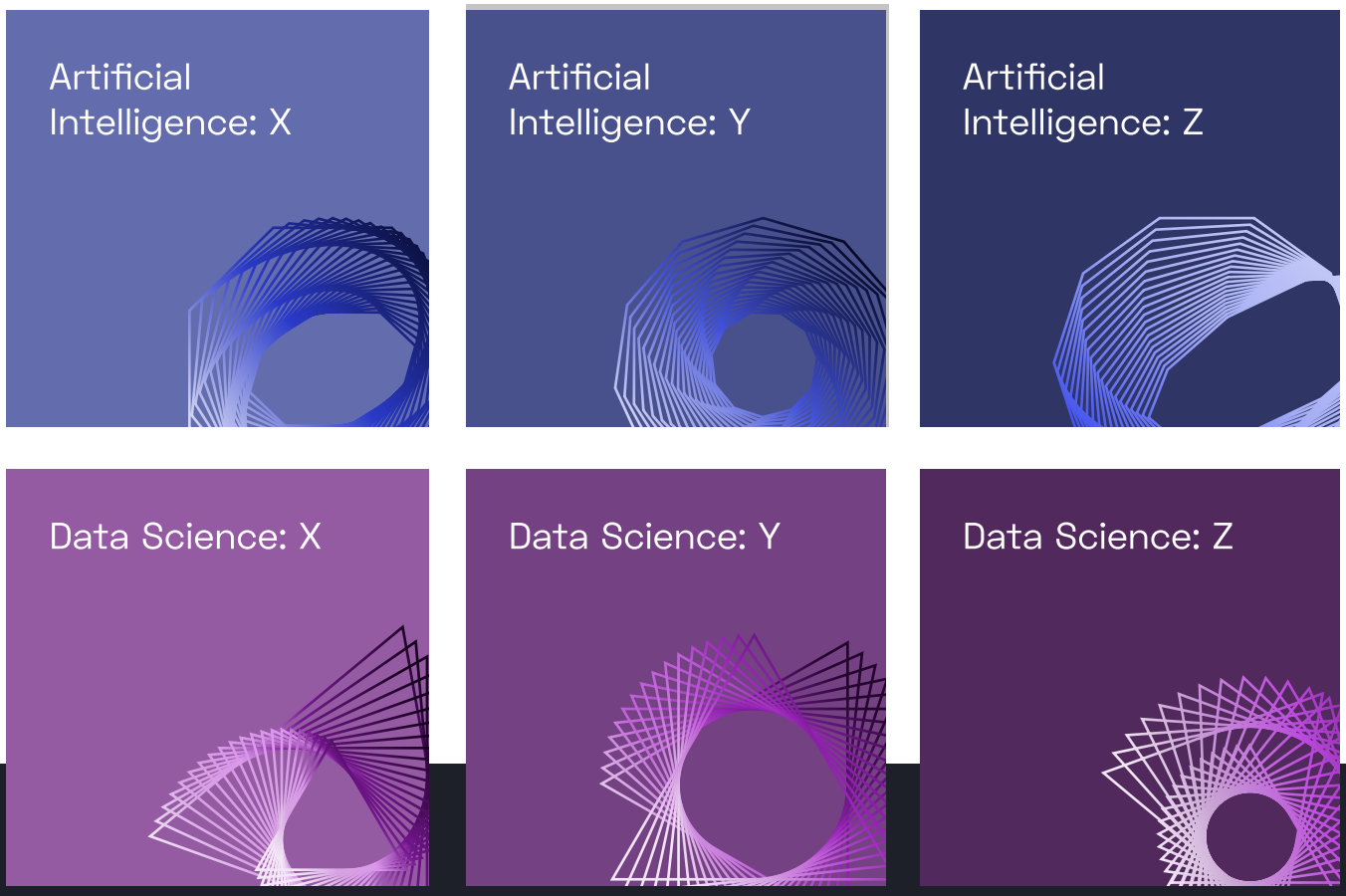
Live! Hands-On Mentorship

Learning by Lots of Doing!

Train to be among the best

Univ.AI offers you a 3-step path to a GUARANTEED high-end job in Machine Learning & Artificial Intelligence, Data Science, or Programming (Coming Soon)

- Learn LIVE-online with Harvard faculty
- Gain expertise in 3 sequential, standalone certifications of 10-12 weeks each
- Get job-ready outcomes and certifications at each level
- The beginner programs are offered at very low costs
- Advance to the Master Certification, risk your investment with a state-of-the-art employment guarantee



Which of the following options is true regarding One-Vs-All method in Logistic Regression?

- [ ] We need to fit n-1 models to classify into n classes
- [ ] We need to fit only 1 model to classify into n classes
- [ ] We need to fit n models in an n-class classification problem
- [ ] None of these

Answer on the next page

Which of the following techniques perform similar operations as dropout in a neural network?

- [ ] Bagging
- [ ] Boosting
- [ ] Stacking
- [ ] None of the above

Previous Answer
We need to fit n models in an n-class classification problem

In a neural network, which of the following techniques is used to deal with overfitting?

- [ ] Dropout
- [ ] Batch Normalization
- [ ] Regularization
- [ ] All of the above

Previous Answer
Bagging

In the 2014 World Cup match between Argentina and Nigeria, Lionel Messi took five free kicks, each time hitting the top right corner, but without scoring a single goal. In terms of accuracy & precision, Messi's shooting can be described as?

- [ ] High accuracy and high precision
- [ ] Low accuracy and high precision
- [ ] High accuracy and low precision
- [ ] Low accuracy and low precision

Previous Answer
All of the above

X is a bias introduced by the selection of data in a way that proper randomization is not achieved, thereby ensuring that the sample obtained is not representative of the population intended to be analyzed. What is X?

- Neyman bias
- Selection bias
- Non-response bias
- Availability bias

Previous Answer
Low Accuracy and High Precision

Assuming that a cross-validation process splits the data into 5 parts, how many times will it run the process of selecting a test data and a training data and checking on that?

- [ ] 10
- [ ] 25
- [ ] 15
- [ ] 5

Previous Answer
Selection bias

How many times will the weights get updated for a network if we provide it 1000 data points with 40 epochs and 20 as the batch size?

- [ ] 2,000
- [ ] 40,000
- [ ] 800,000
- [ ] 1,000

Previous Answer
5

Random forests are generally preferred to decision trees because of X in decision trees. What is X?

- [ ] Underfitting
- [ ] Overfitting
- [ ] White box model
- [ ] Simplicity

Previous Answer
2,000

Which of the following hyper parameter(s), when increased may cause random forest to overfit the data?

- [ ] Number of trees
- [ ] Maximum Depth of tree
- [ ] Learning Rate
- [ ] Minimum number of data points allowed in a leaf node

Previous Answer
Overfitting

Find the total number of parameters for the neural network which has 4 input features, 10 units in Hidden Layer 1, 5 units in Hidden Layer 2, and 3 units in Output layer.

- [ ] 123
- [ ] 44
- [ ] 22
- [ ] 105

Previous Answer
Maximum depth of tree

Which of these is/are the most widely used methods to assess a classification model?

- [ ] Confusion matrix
- [ ] Cost-sensitive accuracy
- [ ] Area under the ROC curve
- [ ] All of the above

Previous Answer
123 (50+55+18)

How can you handle missing or corrupted data in a dataset?

- [ ] Drop missing rows or columns
- [ ] Replace missing values with mean/median/mode
- [ ] Assign a unique category to missing values
- [ ] All of the above

Previous Answer
All of the above

Each k x k filter (channel) in a convolutional unit is used to

- Identify a pattern anywhere in an image
- Identify a pattern at a fixed position in an image
- Identify all different patterns anywhere in an image
- Identify all different patterns at a fixed position in an image

Previous Answer
All of the above

Let’s say you are using activation function X in hidden layers of a neural network. At a particular neuron for any given input, you get the output as -0.0001. Which of the following activation function could X represent?

- [ ] ReLU
- [ ] tanh( )
- [ ] Sigmoid
- [ ] None of the above

Previous Answer
Identify a pattern anywhere in an image

What steps can we take to prevent overfitting in a neural network?

- [ ] Data Augmentation
- [ ] Weight Sharing
- [ ] Early Stopping
- [ ] Dropout

Previous Answer
tanh( )

Which of the following neural network training challenges can be solved using batch normalization?

- [ ] Overfitting
- [ ] Restrict activations to become too high or low
- [ ] Training is too slow
- [ ] All of the above

Previous Answer
All of the above

Is it compulsory to have a pooling layer after every convolution layer?

- [ ] True
- [ ] False

Previous Answer
All of the above

Which of the following is not a stochastic algorithm?

- [ ] Principal Component Analysis
- [ ] K-means
- [ ] Stochastic Gradient Descent
- [ ] Bagging

Previous Answer
False

Which of the following gives non-linearity to a convolutional neural network?

- [ ] Stochastic Gradient Descent
- [ ] Rectified Linear Unit at an intermediate layer
- [ ] Convolution kernel at an intermediate layer
- [ ] The sigmoid probability creation function at the last layer

Previous Answer
Principal Component Analysis

ReLU outputs the same value as input when?

- [ ] Input is positive
- [ ] Input is non-negative
- [ ] Input is negative
- [ ] Same value for any input

Previous Answer
Rectified Linear Unit at an intermediate layer

Univ.AI

To learn more, drop us a note at hello@univ.ai

Previous Answer
Input is non-negative