

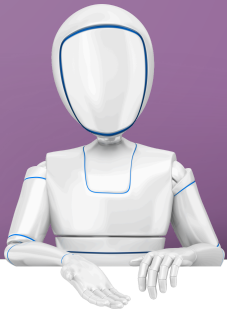


**CRISTLE ACADEMY**

# **ARTIFICIAL INTELLIGENCE**

**Course Curriculum**





# SYLLABUS

1

## Induction Class

React Database interaction  
React with ReactDOM Server

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## Introduction of AI

Background  
Need & Importance  
Introduction and Installation  
Writing first program  
I/O in Python

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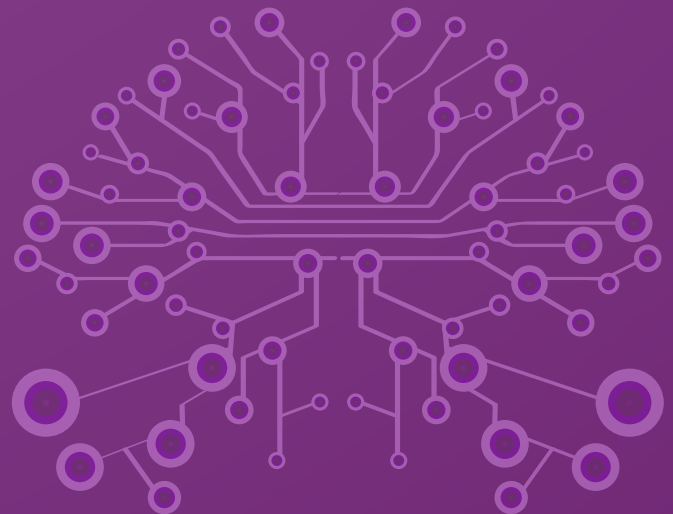
## Programming Elements

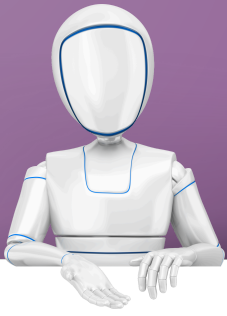
Keywords & Variables  
Data Types - Numbers and Strings  
Operations in Python  
Hands on Implementation

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## Conditions & Loops

Indentation & Scopes  
If else and Elif Blocks  
Introduction to Loops  
For & While Loops  
Break & Continue Statements





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# SYLLABUS

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## Data Structures

Lists  
Tuples  
Sets Dictionaries  
CRUD Operations on Data Structures  
Building Rock Paper Scissor with Console

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## Functions & Exception Handling

Introduction to Function  
Positional & Keyword Arguments  
Return Statements  
Try, Catch and Fianlly Block

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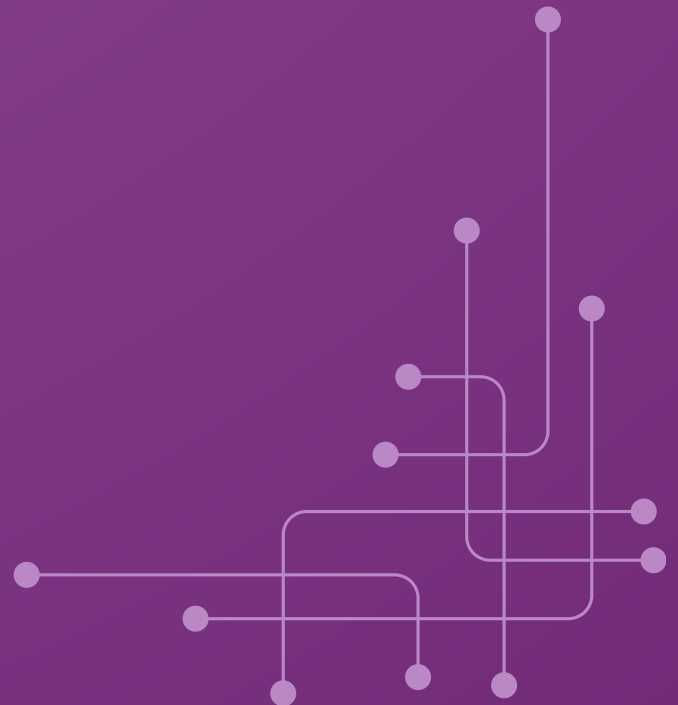
## Add On Topics

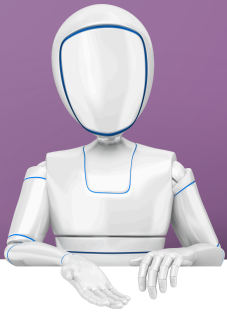
File Handling - i/o  
Numpy Arrays  
Case Studies

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## Basics Of AI

What is AG vs ML vs DL?  
AG Application  
Teachable Machine - Demo





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## Neural Networks Basics

Artificial Neuron  
Weights, Bias & Activation  
Function  
Forward Propagation

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## Backward Propagation

Optimizer - Gradient Descent & Adam  
Tensorflow & Keras Basics  
What are Tensors?

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## Loss Function & Error

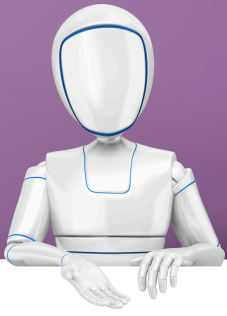
Regression Loss vs Probabilistic Loss  
MSE - Mean Square Error  
Simple Neural Network

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## Artificial Neural Networks

Binary Cross Entropy  
Artificial Neural Network  
Sigmoid vs Softmax Activation Function  
Derivative of Relu & Sigmoid





# SYLLABUS

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## Importance of Data Normalization

What is Vanishing Gradient?  
Classification in Deep Learning  
Image Basics - Pixels

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## Classification Metrics-Confusion Matrix

What is Overfitting?  
Regularization Techniques  
Adding Dropout Layers & Custom Callbacks

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## Open CV Basics

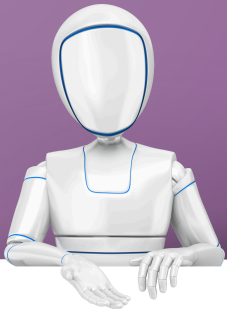
What are Filters & Kernals  
Convolution Operation  
Blurring, Embossing, Sharpening

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## How to Save Deep Learning Mode

Minor Projects on Digital  
Recognizer  
Stream lit Canvas  
Brush Strokes and Pixel for Canvas





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## **CNN Basics**

Convolutional Layer  
Pooling Layer  
Padding & Stride  
Distance

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## **Transfer Learning**

Imagenet Competition  
VGG16 vs Mobilenet  
Saved Weights

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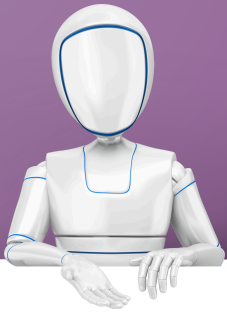
## **Final Project & Doubt Clearing**

Image Data Augmentation  
Final Project

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## **Web App Development**

Platform as a Service  
Procfile & Setup File  
Deployment on Heroku  
Platform



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## Image to Text

Tesseract Software  
Optional Character Recognition  
Web App for OCR

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## Cascade Classifier

Shapes in Open CV  
Face Detecting using Haar  
Cascade  
Detect Multiscale Function

23

## Object Detection Demonstration

Bounding Box  
YOLO Algorithm

24

## Support

Tricks & Tips to Clear Interview Questions  
Most Preferred Interview Questions  
Resume Preparation & Cover

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## **CONTACT US**



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