fingerTips

Data Intelligence Solutions

BUILD YOUR CAREER IN EMERGING TECHNOLOGIES WITH

ADVANCED AI PROGRAM

ONLINE | CLASSROOM | INSTRUCTOR LEAD

ABOUT THE PROGRAM

The Artificial Intelligence Industry is considered as one of the most promising industries in the world today. AI and ML Professionals are highly paid in the market and get 80-90% higher salaries than any other sector. According to experts, every industry will require AI and ML experts by 2025. Therefore, it is high time to get familiar with this emerging technology.

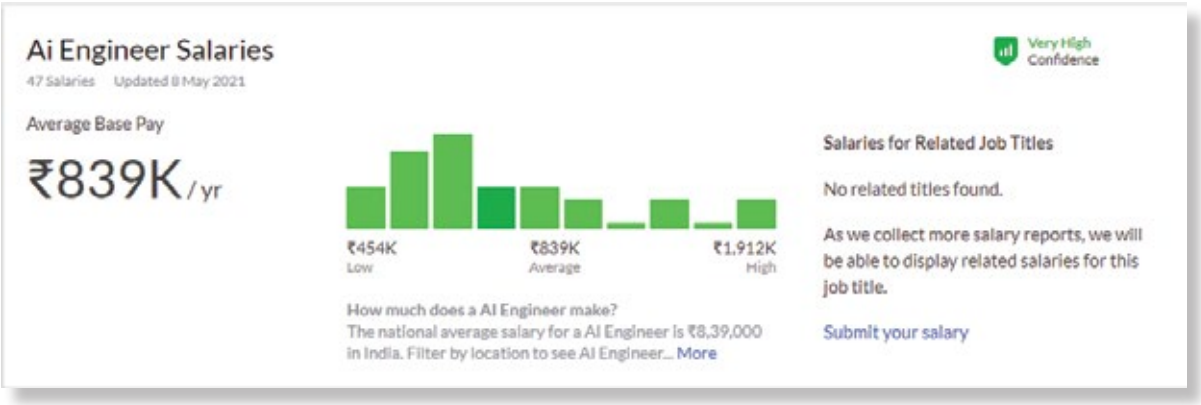
The Fingertips Advanced AI Master Program is an opportunity for youngsters to polish their skills in emerging technology of AI and ML. During this course, learners are trained in deep learning, machine learning, programming languages needed in the Artificial Intelligence realm. The course also offers mentorship, Industry Interactions to meet the needs of learners. The years of experienced team provide 24/7 assistance during training to understand and solve the complex problems of AI and ML. The learners get an opportunity to practice on real data from Amazon, Uber, Netflix, Zomato and Twitter.

INDUSTRY LANDSCAPE

Careers in Artificial Intelligence?

We are living in the age of Data and it is considered a vital asset for the Company. A massive amount of data is generated by both humans and machines every day. AI is the future of decision-making for the growth of business and today these techniques are the most sought-after emerging technologies in the world.

SALARY TRENDS



Source : Glassdoor

COMPANIES HIRING

ARTIFICIAL INTELLIGENCE TRENDS

Forbes

According to Forbes, the number of AI based startups has increased by 14 times since 2000 and the AI industry will create 58 million new jobs by 2022.

accenture

Accenture, the IT company has massive use of AI Cloud in it's business and predict that it could double economic growth rates by 2035 and it could increase their productivity by 40%

Harvard Business Review

36% of executives say that their primary goal for incorporating AI is to optimize internal business

The market size of Artificial Intelligence is expected to reach at $733.7 billion by 2027. The global market of AI is increasing by 42%

Google also uses AI and ML in it's operations and believes that Machine Learning Program is 89% accurate and effective than Pathologists.

The e-commerce pioneer has extensive use of ML and it has reduced the “click to ship” time by 15 minutes which is overall decrease of 225%

PROGRAM HIGHLIGHTS

250+ Hours Intensive Training

Industry-Recommended Learning path

Industry Oriented Curriculum

Case Studies

Live Projects

Real World Assignments

24/7 Support

Sessions From Industry Experts

Profile Building Sessions

Capstone Projects

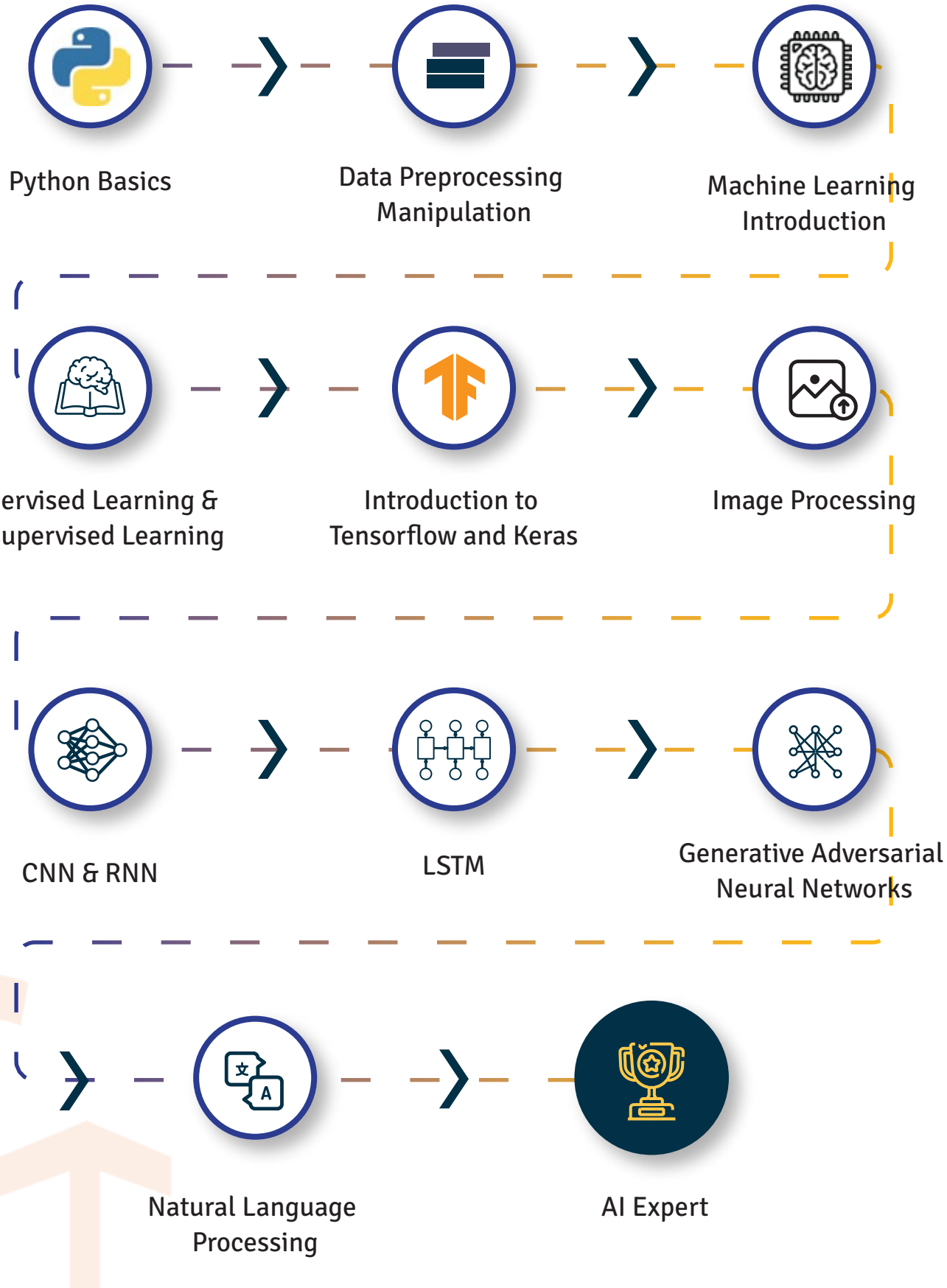
Develops Capacity for Learners

Interview Preparation

WHO IS THIS PROGRAM FOR?

- Freshers
- Data Science Professionals
- Entrepreneurs
- Undergraduates
- Business Intelligence Professionals

LEARNING PATH



CURRICULUM

DATA SCIENCE WITH PYTHON

OVERVIEW OF DATA SCIENCE USING PYTHON

- Introduction to Data & Data Types
- Numerical parameters to represent data
- Data Science v/s Data Analytics v/s Business Intelligence
- Importance of Data Science in today's data-driven world, application of Data Science
- Role of Data Scientist
- Introduction to Databases and its Types
- Steps of Data Science & Machine Learning
- Use cases of Data Science in different industries

PYTHON ENVIRONMENT SETUP AND ESSENTIALS

- Python installation and set up
- Python IDE working mechanism
- Running some Python basic commands
- Python variables, data types and keywords
- Libraries and Modules in Python

BASIC PYTHON CONSTRUCT

- How to use indentation like tabs and space
- Built in data types in Python
- Number, Strings, List, Tuple, Set, Dictionaries
- Basic Operators and Functions
- Conditional and Control Statements
- Lambda expression

NUMPY FOR MATHEMATICAL COMPUTING

- Introduction to Numpy
- What are arrays and matrices,
- Array Indexing
- Array Math
- Inspecting a NumPy array
- NumPy array manipulation
- Basic Numpy operations
- Using Arithmetic Operators with Numpy
- Using Numpy with Conditional Expressions
- Arithmetic Operators with Numpy 2D Arrays
- Arithmetic Functions in Numpy
- Logical Operators in Numpy

DATA MANIPULATION WITH PANDAS

- Introduction to Pandas
- Basic Functionalities of series and Data Frames
- Transforming Data-sorting rows and columns
- Slicing and Dicing Functions
- Missing Value Handling

DATA VISUALIZATION WITH MATPLOTLIB AND SEABORN

- Introduction to Data Visualization
- Introduction to Matplotlib
- Using Matplotlib for Plotting Graphs

MACHINE LEARNING WITH PYTHON

INTRODUCTION TO MACHINE LEARNING

- Introduction to Machine Learning
- Use Cases of Machine Learning
- Types of Machine Learning
- Machine Learning Modelling Flow
  What is Supervised v/s Unsupervised Learning?
- What is Reinforcement Learning?
- Challenges of ML

LINEAR REGRESSION

- Use cases of Linear Regression
- Understanding Simple Linear Regression
- What is Multiple Linear Regression?
- Learning about Lasso Regression
- Learning about Ridge Regression
- Measuring Performance Metrics

SUPERVISED LEARNING

- Introduction to Supervised Learning
- Supervised Learning- Real-life Scenario
- Supervised Learning Flow
- Types of Supervised Algorithms
- What is Logistics Regression?
- Linear Regression Vs Logistic Regression
- Understanding Logistic Regression
- What is Decision Tree?
- Decision Tree Formation
- Overfitting of Decision Trees
- Information Gain
- Gini Index

UNSUPERVISED LEARNING

- Introduction to Unsupervised Learning
- Unsupervised Learning- Real-life Scenario
- Unsupervised Learning Flow
- Types of Unsupervised Algorithms
- What is Clustering?
- Learning about K-means Clustering
- Optimal Number of Clusters
- Understanding Hierarchical Clustering
- Hierarchical Clustering Example
- Accuracy Metrics

FEATURE ENGINEERING

- Factor Analysis
- Factor Analysis
- Feature Encoding
- Feature Scaling
- Feature Selection
- Outlier Treatment

ENSEMBLE LEARNING

- Understand Ensemble Learning
- Ensemble Learning - Real-life Scenario
- Ensemble Learning Flow
- Types of Ensemble Learning Algorithm
- Understanding about Random Forest
- Math Behind Random Forest
- Bagging & Boosting
- Learn about Adaboost
- Adaboost Algorithm
- Gradient Boosting
- Xgboost
- Model Selection
- Common Splitting Strategies

DIMENSIONALITY REDUCTION

- Understanding Dimensionality Reduction
- Why is Dimensionality Reduction required?
- Factor Analysis
- Factor Analysis
- First Principal Component
- Eigenvalues and PCA
- Practice: PCA Transformation
- Exploratory Factor Analysis

AI AND DEEP LEARNING WITH KERAS

INTRODUCTION TO AI AND DEEP LEARNING

- What Is Ai and Deep Learning
- History of Deep Learning
- Machine Learning Vs Deep Learning
- How Deep Learning Is Different from All Other Machine Learning Methods
- Real Life Applications of Deep Learning
- The Benefits of Machine Learning
- Challenges of Deep Learning
- Latest Breakthrough in Deep Learning
- General Flow of Deep Learning Projects

ARTIFICIAL NEURAL NETWORK

- Biological Neuron
- Perceptron
- Multi Layer Perceptron
- Weight and Bias
- Feed Forward Neural Network (ann)

INTRODUCTION WITH TENSORFLOW

- Introduction to Tensorflow
- Tensorflow Hello World
- Linear Regression With Tensorflow
- Logistic Regression With Tensorflow
- Deep Neural Networks
- Tensorflow 1x Vs Tensorflow 2.0

DEEP NEURAL NETWORK ENHANCEMENT

- Train/validation/test
- Bias
- Variance
- Bias Variance Trade Off
- Regularization
- Batch Normalization

CONVOLUTIONAL NEURAL NETWORK

- Introduction to Computer Vision
- Introduction to Convolutional Neural Network
- CNN Design and Architecture
- Convolutional Layer
- Padding
- Stride
- Pooling Layer
- Flattening Layer
- Softmax Layer
- Feature Detector & Feature Maps

RECURRENT NEURAL NETWORKS

- Recurrent Neural Network (rnn)
- Architecture of RNN
- Backpropagation in RNN
- Different Types of RNN s
- Bidirectional RNN
- Applications of Rnn
- Problems With Rnn and Why We Need Lstm

LONG SHORT TERM MEMORY

- Problems With RNN
- Architecture of LSTM
- Relevant Terminologies in LSTM
- Step by Step Lstm Walk Through
- Variants on Lstm

AUTOENCODER

- Introduction to Autoencoders
- Applications of Autoencoders
- Autoencoder for Anomaly Detection

COMPUTER VISION

WORKING WITH IMAGES

- Image Formation
- Image Processing – Flipping, Cropping, Rotating, Scaling
- Image Histogram
- Convolution
- Smoothing, Sharpening
- Bounding Box
- Advance Image Manipulation
- Stream Video Processing With Opencv

IMAGE CLASSIFICATION WITH KERAS

- Understanding Image Classification
- Get Familiar With Keras
- Image Classification and Cnn
- Famous Cnn Architectures
- Transfer Learning Method
- Building Your Know Cnn
- Comparing Your Cnn With Different Models

OBJECT DETECTION

- Intro to Object Detection and Localization
- Region Based Cnn: Rcnn, Fast Rcnn, Faster Rcnn
- Implementation of Faster Rcnn
- Single Shot Detector
- Implementation of Ssd
- Yolo Object Detection
- Installing and Setting up Keras Implementation of Yolo
- Using a Pre-trained Yolo Model for Object Detection
- Applications

GENERATIVE ADVERSARIAL NETWORKS

- Introduction to GAN
- Working of Generative Adversarial Neural Networks
- Types of Generative Adversarial Neural Networks
- Applications of Gans
- Building Gans

NATURAL LANGUAGE PROCESSING

UNDERSTANDING NLP

- Introduction to NLP
- Overview of Text Mining
- What Is NLP?
- Typical NLP Tasks
- Natural Language Processing (NLP) in Text Mining
- Applications of Text Mining
- Reading, Writing to text and word files
- Setting the NLTK Environment
- Accessing the NLTK Corpora

EXTRACTING, CLEANING AND PREPROCESSING TEXT

- Understanding Text Data
- Tokenizers
- Tokenization
- Frequency Distribution
- Different Types of Tokenizers
- Stemming
- Lemmatization
- Bigrams, Trigrams & Ngrams
- Stop Words
- Spell Correction
- POS Tagging
- Normalizing Text

TEXT CLASSIFICATION

- Overview of Machine Learning
- Words
- Term Frequency
- Countvectorizer
- Inverse Document Frequency
- Text conversion
- Bag-of-words(bow), Tf-idf
- Similarity Score - Cosine Similarity
- Naïve Bayes Classifier
- Confusion Matrix

ADVANCE NLP

- Data Acquisition and Web Scraping
- Text Preprocessing and Modelling Techniques
- Memory in Neural Networks
- Recurrent Neural Networks (RNN)
- Introduction to Sequential Models
- Long Short Term Memory (LSTM)
- Implement Gated recurrent unit (GRU)

AUDIO ANALYSIS

AUDIO ANALYSIS

- Introduction to Audio Analysis
- Data Handling in Audio Domain
- Python Speech Recognition
- Reading an Audio File in Python
- Reading a Segment of Audio
- Dealing With Noise
- Preprocessing Audio Files

BUILD AUDIO MODELS

- Load audio files
- Data Handling in Audio domain
- Extract features from audio
- Convert the data to pass it in our deep learning model
- Run a deep learning model and get results
- Genre classification using Artificial Neural Networks(ANN).

VIDEO ANALYSIS

INTRODUCTION TO VIDEO ANALYSIS

- Understanding Video Structure
- Why Video Analysis
- Benefits of Video Analysis
- Applications
- Real Life examples of Video Analysis
- Features and Concepts of Video

PRACTICAL UNDERSTANDING OF VIDEO

- Reading a Video
- Loading a Video
- File Handling in Python
- Pre processing Videos
- Extracting Features from Video
- Extracting Frames
- Smoothing Images for Clear Detection
- Initializing the Video Capture Object
- Optical Flow Algorithm
- Understanding Features of Face Detection
- Working with Face Detection
- Features of Tracking
- Tracking and Counting Cars

REINFORCEMENT LEARNING

BASICS OF REINFORCEMENT LEARNING

- Introduction to Reinforcement Learning
- The Reinforcement Learning Process
- Elements of Reinforcement Learning
- Reinforcement Learning Problem
- Introduction to OpenAI Gym
- States, Actions, Rewards, Policies
- Markov Decision Processes (MDPs)
- The Return
- Value Functions and the Bellman Equation
- Epsilon-Greedy
- Q-Learning

OVERVIEW OF OPENAI GYM

- Saving a Video
- CartPole with Bins
- RBF Neural Networks
- Introduction to Theano
- Tensorflow Warmup

BANDIT ALGORITHM AND MARKOV DECISION

- Bandit Algorithms
- Markov Process
- Markov Reward Process
- Markov Decision Process
- Implementing Markov

DYNAMIC PROGRAMMING

- Introduction to Dynamic Programming
- Dynamic Programming Algorithms
- Monte Carlo Methods
- Temporal Difference Learning Methods

WORKING WITH PYTORCH

Self Paced

INTRODUCTION TO DEEP LEARNING AND PYTORCH

- Understanding Deep learning
- Introduction to Pytorch
- Pytorch Benefits
- Pytorch vs Tensorflow
- Supervised Learning with Pytorch
- Unsupervised Learning with Pytorch

ARTIFICIAL NEURAL NETWORK

- Introduction to Artificial Neural Network
- Linear Regression with PyTorch
- DataSets with PyTorch
- Basic Pytorch ANN
- Full Connected ANN with Pytorch

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- Basic Pytorch ANN
- Full Connected ANN with Pytorch

CONVOLUTION NEURAL NETWORK

- Introduction to CNNs
- CNN with MNIST Dataset
- Developing your own CNN model
- Understanding Deep CNN Architectures
- Working with deep CNN Architectures

NATURAL LANGUAGE PROCESSING

- Introduction to NLP with PyTorch
- Uses of NLP
- Encoding Text Data
- Generating Training Batches
- Creating the LSTM Model
- Training the LSTM Model

DEPLOY MACHINE PROJECTS WITH FLASK

Self Paced

INTRODUCTION TO REST AND FLASK

- What is an API?
- What is Flask?
- HTTP Verbs
- REST Principles

SETTING UP FLASK

- Virtualenvs and setting up Flask-RESTful
- Flask Basics
- Basic Routes
- Flask Dynamic Routing
- Debug Mode
- Flask Routing
- Flask Hello World

TEMPLATES

- Template Basics
- Template Variables
- Template Control Flow
- Template Inheritance
- url_for help Function
- Template Forms

FLASK REST API

- Introduction to REST
- Basic REST API Example
- CRUD REST Basics
- Authorization with Flask-JWT
- Flask REST API with Databases

CREATING AND DEVELOPING DEEP LEARNING MODEL

- Develop a Deep Learning model
- Saving & loading TensorFlow Keras models
- Creating the skeleton of our Flask web app
- Finishing the main web page
- Deploying our web app

UNDERSTANDING WEB SCRAPING

- What is Web Scraping?
- Origin of Web Scraping
- Web Crawling v/s Web Scraping
- Uses of Web Scraping
- Components of a Web Scraper
- Working of a Web Scraper
- Why Python for Web Scraping?
- Important Python Libraries for web scraping

PATH TOWARDS BUILDING WEB SCRAPER

- Setting up Python Environment for Web Scraping
- Python Modules for Web Scraping
- Requests
- Urllib3
- Selenium
- Scrapy
- Extract data using Beautiful Soup
- Full Table Scraping
- Row Scraping
- Header Scraping

UNDERSTANDING NLP

- Introduction to NLP
- Introduction to Text Mining
- What is NLP?
- Typical NLP Tasks
- Natural Language Toolkit (NLTK) Environment

WORKING WITH NLP

- Understanding text data
- Tokenizers
- Tokenization
- Stemming
- Lemmatization
- Stop Words
- Spell Correction
- Normalizing Text
- Extracting Features from Text
- Bag-of-Words(BoW), TF-IDF
- Similarity score - Cosine similarity
- Naïve Bayes Classifier

PROCESSING DATA

- Data Type Conversions
- Filtering
- Sorting
- Cleaning

VISUALIZATION

- Introduction to Data Visualization
- Trying different Basic Data Visualization
- Advance Data Visualization
- Taking insights from Data

REAL WORLD CASE STUDIES

Hands on Project, Real World simulation exercise and practise on case studies are one of the key USPs of FingerTips. In FingerTips Advance AI Master Program, we provide a series of Artificial Intelligence projects developed by our subject matter specialists. Instructors also facilitate learners during handling of projects. We also prepare students for Hackathons to get global exposure to technology and learn from experts.

PROJECTS

HUMAN FACE DETECTION
Computer Vision

Create a model that detects the bounding boxes of the human face and get started with object detection.

AUTOMATIC MUSIC GENERATION
Computer Vision

Try to make your own music. Use the LSTM Model to produce new music that has never been heard before in this project.

TEXT SUMMARIZER
NLP

An overview of the article is very useful. Build a text summarizer using natural language processing and deep neural networks.

CHATBOT USING DEEP LEARNING
Computer Vision

Build a chatbot that can use deep learning to understand the meaning of the user's query and then have the necessary response.

FACE MASK DETECTION

NLP

To use machine vision and deep learning algorithms to recognise a person wearing a face mask in a picture using Deep learning models

MOVIE RECOMMENDATIONS

Computer Vision

The aim of this project is to construct a classifier that can understand the gender of a human voice.

DROWSINESS DETECTION SYSTEM

Computer Vision

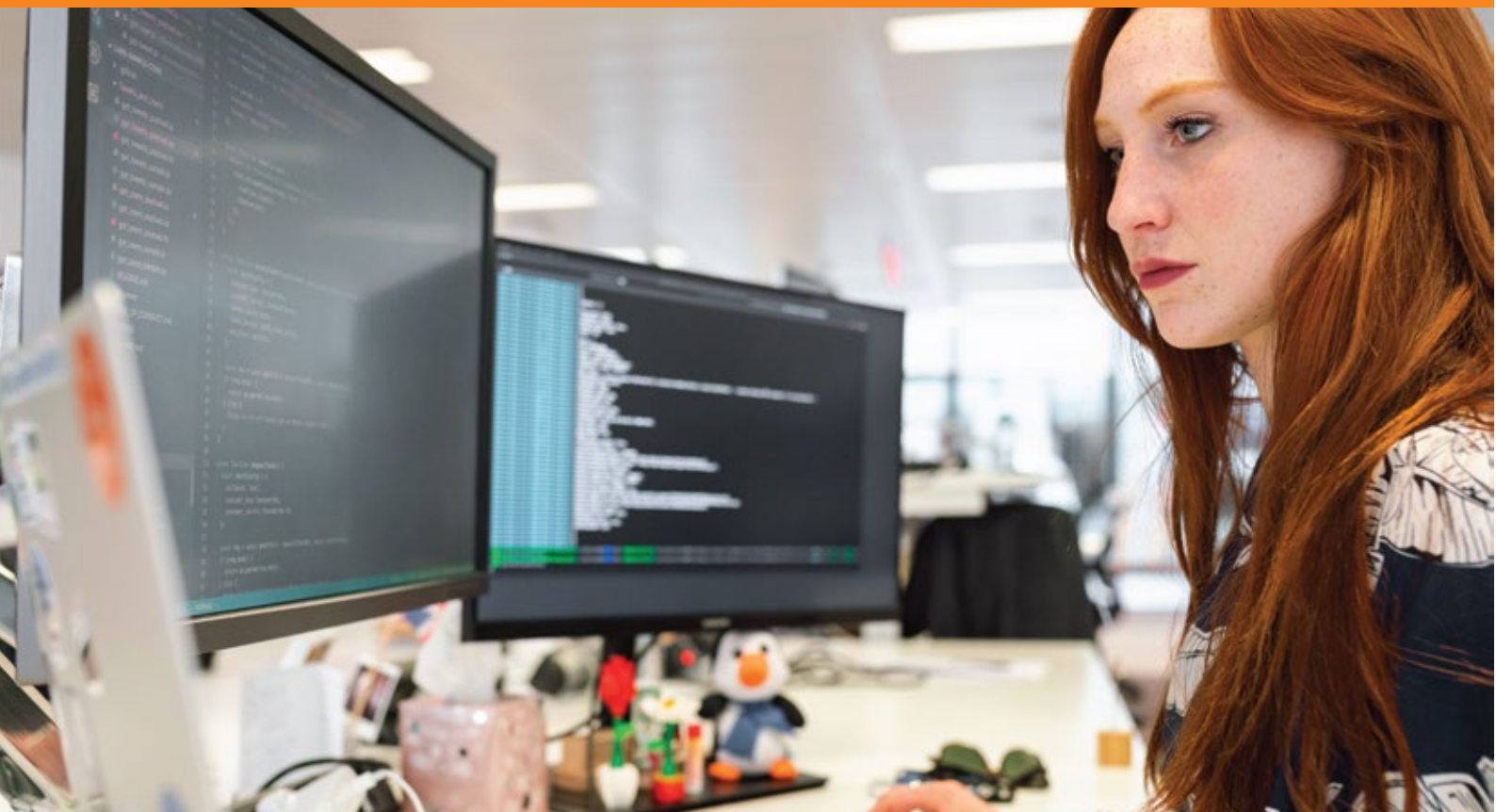
A system, to distinguish between natural eye twitch and drowsiness, as well as detect drowsiness when driving.

GENDER RECOGNITION USING VOICE

Computer Vision

The aim of this project is to construct a classifier that can understand the gender of a human voice.

AND MORE 20+



CAREER ASSISTANCE

Our dedicated Career Support team starts working with our trainees from day one in facilitation of their placements. The main features of our career support are.

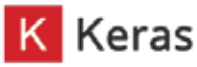
HR Rounds

Placement Support

Technical Rounds

Resume Building

TOOLS



PROGRAM CERTIFICATE

ADVANCED AI PROGRAM

Fingertips believe in the 360 degree development of our learners thro ugh rigorous training programme. Our Advance AI Master Programme focuses on making our learners successful through the highly demanding course. The course offers in-depth technical training, Industry Interactions, Hands on Practice to meet the desired needs of learners. The years of experienced team provide one to one support during training to understand and solve the complex problems of Artificial Intelligence and Machine Learning. Assurance of placement assistance at the end of course is one thing which makes us the most reliable company in this segment.

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Know More !!

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