ADVANCED CERTIFICATE PROGRAMME IN
MACHINE LEARNING &
DEEP LEARNING

Program Highlights

Advanced Certificate Program from Chools & JG University

Differentiate yourself from your peers
by earning the industry recognised
Advanced Certificate Program
from Chools & JG University.

For the Industry, by the Industry

Learn and apply concepts on
industry projects along with
personalised industry mentorship.

360 Degree Career Assistancet

Receive 360 degree career support
from access to chools job opportunities
portal, 1:1 profile reviews, career mentorship
from industry experts and much more.

Personalised Mentorship

Get unparalleled personalised
mentorship and doubt resolution
from Chools & JG faculty and our panel
of industry experts.

Unparalleled Learning Experience

Learn the concepts from experienced
Chools faculty & understand the applications from
Industry experts to get a blend of theoretical knowledge
and practical-hands on experience.

Chools & JG Learning Experience

Coaching

·Student Support Team & Chools – JG
·Weekly real–time doubt clearing sessions
·Reverse knowledge transfer sessions (FLIP classrooms) with learners assuming the role of an expert and tutoring fellow batchmates
·100+ commonly asked interview questions added across modules
· Live Discussion forum for peer to peer doubt resolution monitored by technical experts
·Peer to peer networking opportunities with an alumni pool of 10000+ professionals
· Lab walk-throughs of industry–driven assignments/case studies/projects
· Employability Tests for industry readiness
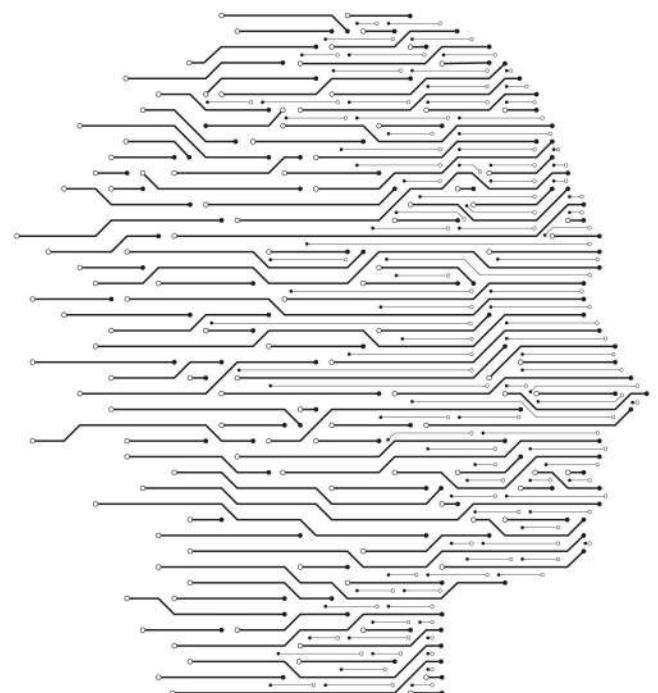·Access to the program for upto 3 years

Format

·Online format with live sessions weekly: Weekly live learning sessions from industry experts to help with topic walkthroughs, doubt resolution and personalised project feedback.
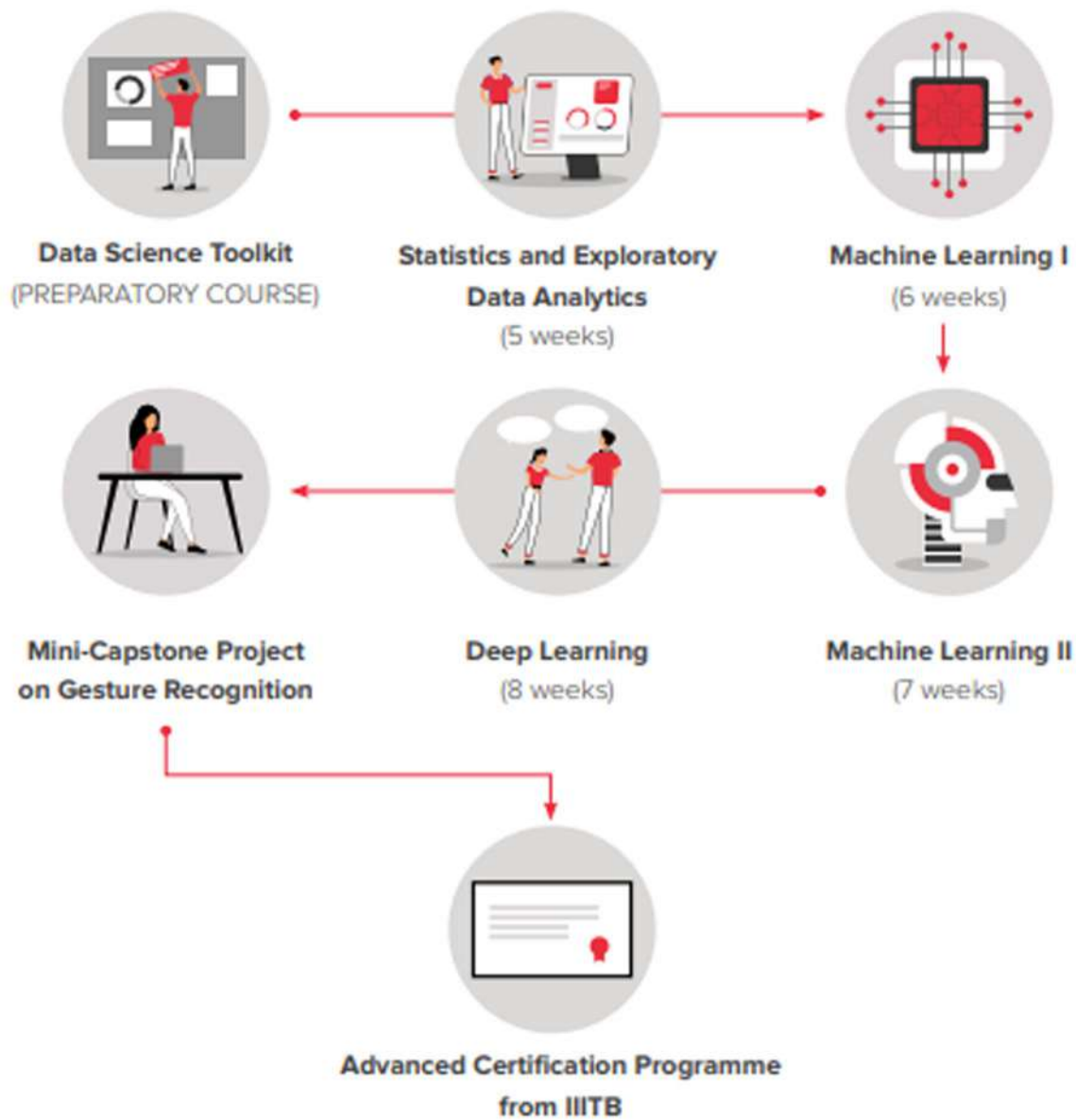·Offline sessions such as Chools & JG basecamps and hackathons

Mentorship

 Live interactive sessions with leading industry experts covering curriculum + advanced topics.
· Fortnightly personalised group (1:8) mentorship sessions with industry experts for pro-active mentoring.

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Learning Path

Data Science Toolkit
(PREPARATORY COURSE)

Statistics and Exploratory Data Analytics
(5 weeks)

Machine Learning I
(6 weeks)

Mini-Capstone Project on Gesture Recognition

Deep Learning
(8 weeks)

Machine Learning II
(7 weeks)

Advanced Certification Programme from IIITB

Programming Tools, Languages & Libraries

Pandas, Matplotlib, Numpy, Seaborn, Scikit-learn, Statsmodels, Open CV, Python, Keras, Tensorflow, MySQL, Excel.

Industry Projects

Investment Analysis

Fill in the shoes of an analyst at an investment bank and determine where the firm should invest. Explain your recommendations in lieu of the analysis conducted.

Lending Club Case

Determine which customers are at the risk of default and what are their characteristics so as to avoid providing loans to similar people in the future.

Car Price Prediction

Build a model to understand the factors car prices vary on and help a Chinese company enter the US car market.

House Price Prediction

Build a model to understand the factors house prices vary on and help an American company enter the Australian housing market.

Industry Projects

Telecom Churn Case

Solve the most crucial business problem for a leading telecom operator in India and southeast Asia - predicting customer churn.

Skin Cancer Detection

Build a neural network from scratch in Numpy to identify the type of skin cancer from image.

MINI CAPSTONE PROJECT:
Gesture Recognition

Make a Smart TV system which can control the TV with user's hand gestures as the remote control.

Program
Curriculum

DATA SCIENCE TOOLKIT

1 INTRODUCTION TO PYTHON
Build a foundation for the most in-demand programming language of the 21st century.

2 PYTHON FOR DATA SCIENCE
Learn how to manipulate datasets in Python using Pandas, which is the most powerful library for data preparation and analysis.

3 DATA VISUALISATION IN PYTHON
Humans are visual learners and hence no task related to data is complete without visualisation. Learn to plot and interpret various graphs in Python and observe how they make data analysis and drawing insights easier.

4 DATA ANALYSIS USING SQL (OPTIONAL)
Data in companies is definitely not stored in excel sheets! Learn the fundamentals of database and extract information from RDBMS using the structured query language.

5 ADVANCED SQL AND BEST PRACTICES (OPTIONAL)
Apply advanced SQL concepts like windowing and procedures to derive insights from data and answer pertinent business questions.

6 DATA ANALYSIS IN EXCEL (OPTIONAL)
Taught by one of the most renowned data scientists in the country (S.Anand, CEO, Gramener), this module takes you from a beginner level Excel user to an almost professional user.

7 ANALYTICS PROBLEM SOLVING (OPTIONAL)
This module covers concepts of the CRISP-DM framework for business problem-solving.

STATISTICS AND EXPLORATORY DATA ANALYTICS

1 EXPLORATORY DATA ANALYSIS
Learn how to find and analyse the patterns in the data to draw actionable insights.

2 INVESTMENT ASSIGNMENT
The students will fill in the shoes of an analyst at an investment bank and determine where the firm should invest. They will then have to explain their recommendations in lieu of the analysis conducted.

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3 INFERENTIAL STATISTICS
Build a strong statistical foundation and learn how to 'infer' insights from a huge population using a small sample.

4 HYPOTHESIS TESTING
Understand how to formulate and validate hypothesis for a population to solve real-life business problems.

5 LENDING CLUB CASE STUDY
Determine which customers are at the risk of default and what are their characteristics so as to avoid providing loans to similar people in the future.

MACHINE LEARNING I

1 LINEAR REGRESSION
Venture into the machine learning community by learning how one variable can be predicted using several other variables through a housing dataset where you will predict the prices of houses based on various factors.

2 ASSIGNMENT: LINEAR REGRESSION
Build a model to understand the factors car prices vary on and help a Chinese company enter the US car market.

3 LOGISTIC REGRESSION
Learn your first binary classification technique by determining which customers of a telecom operator are likely to churn to help versus who are not to help business retain customers.

4 NAIVE BAYES
Understand the basic building blocks of Naive Bayes and learn how to build an SMS Spam Ham Classifier using Naive Bayes technique.

5 MODULE SELECTION
Learn the pros and cons of simple and complex models and the different methods for quantifying model complexity, along with regularisation and cross validation.

MACHINE LEARNING II

1 ADVANCED REGRESSION
Understand generalised regression and different feature selection techniques, along with the perils of overfitting and how it can be countered using regularisation.

2 ADVANCED REGRESSION ASSIGNMENT
Build a model to understand the factors house prices vary on and help an American company enter the Australian housing market.

3 SUPPORT VECTOR MACHINE (OPTIONAL)
Learn how to find a maximal marginal classifier using SVM, and use them to detect spam emails, recognise alphabets and more!

4 TREE MODELS

Learn how the human decision making process can be replicated using a decision tree and other powerful ensemble algorithms.

5 MODEL SELECTION: PRACTICAL CONSIDERATIONS

Given a business problem, how do you choose the best algorithm? Learn a few practical tips for doing this here.

6 BOOSTING

Learn how weak learners can be 'boosted' with the help of each other and become strong learners using different boosting algorithms such as Adaboost, GBM, and XGBoost.

7 UNSUPERVISED LEARNING: CLUSTERING

Learn how to group elements into different clusters when you don't have any pre-defined labels to segregate them through K-means clustering, hierarchical clustering, and more.

8 UNSUPERVISED LEARNING: PRINCIPAL COMPONENT ANALYSIS

Understand important concepts related to dimensionality reduction, the basic idea and the learning algorithm of PCA, and its practical applications on supervised and unsupervised problems.

9 TELECOM CHURN CASE STUDY

Solve the most crucial business problem for a leading telecom operator in India and southeast Asia - predicting customer churn.

DEEP LEARNING

1 INTRODUCTION TO NEURAL NETWORKS

Learn the most sophisticated and cutting-edge technique in machine learning - Artificial Neural Networks or ANNs.

2 NEURAL NETWORKS - ASSIGNMENT

Build a neural network from scratch in Numpy to identify the type of skin cancer from image.
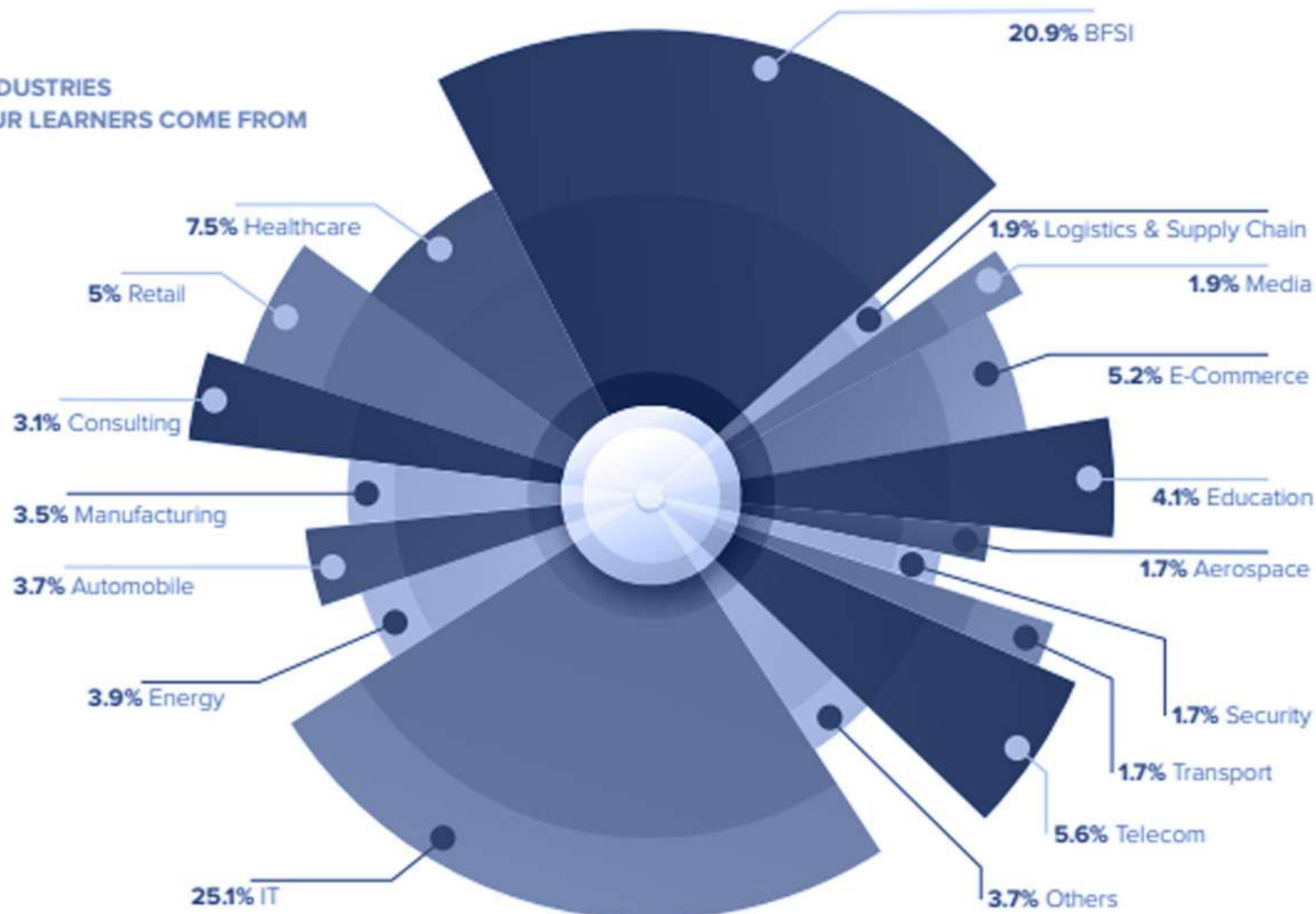
3 CONVOLUTIONAL NEURAL NETWORKS

Learn the basics of CNN and OpenCV and apply it to Computer Vision tasks like detecting anomalies in chest X-Ray scans, vehicle detection to count & categorise them to help the government ascertain the width and strength of the road.

4 RECURRENT NEURAL NETWORKS

Ever wondered what goes behind machine translation, sentiment analysis, speech recognition etc.? Learn how RNN helps in these areas having sequential data like text, speech, videos, etc.
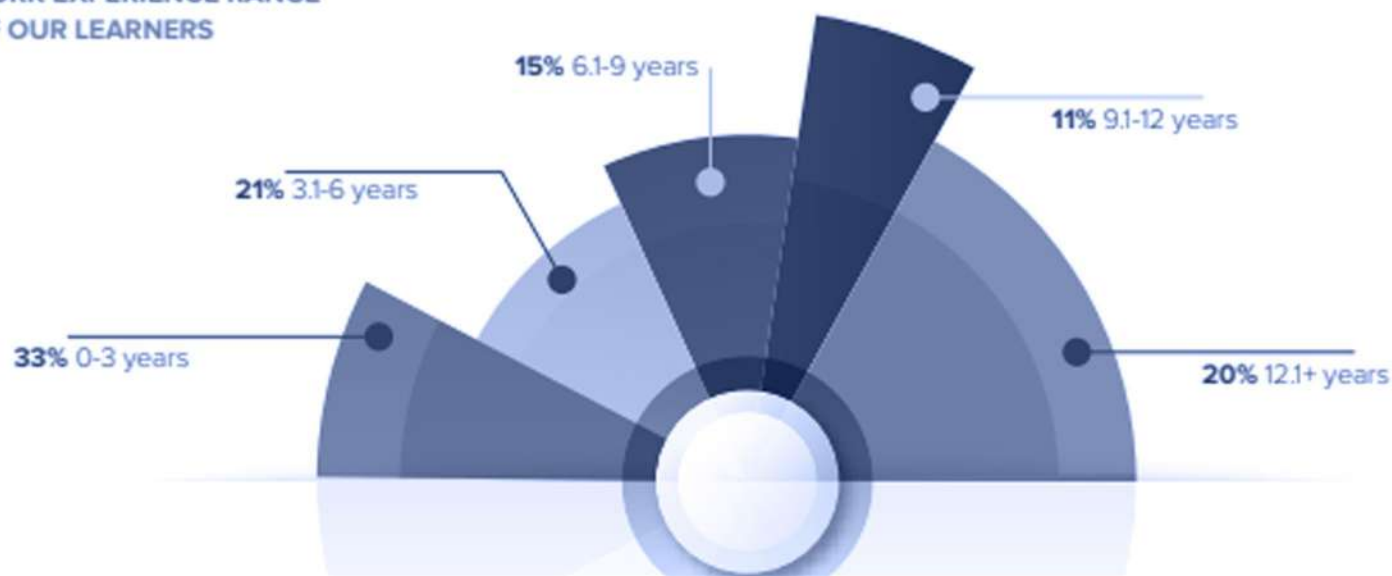
5 GESTURE RECOGNITION - PROJECT

Make a Smart TV system which can control the TV with user's hand gestures as the remote control.

Meet the Class

INDUSTRIES OUR LEARNERS COME FROM

- 20.9% BFSI
- 1.9% Logistics & Supply Chain
- 1.9% Media
- 5.2% E-Commerce
- 4.1% Education
- 1.7% Aerospace
- 1.7% Security
- 1.7% Transport
- 5.6% Telecom
- 3.7% Others
- 25.1% IT
- 3.9% Energy
- 3.7% Automobile
- 3.5% Manufacturing
- 3.1% Consulting
- 5% Retail
- 7.5% Healthcare

WORK EXPERIENCE RANGE OF OUR LEARNERS

- 15% 6.1-9 years
- 11% 9.1-12 years
- 21% 3.1-6 years
- 33% 0-3 years
- 20% 12.1+ years

Program Details and
Admission Process

PROGRAM DURATION AND FORMAT
6 Months | Online

PROGRAM FEE
INR 99,000 (inclusive of taxes)

ELIGIBILITY
Bachelor's degree with 50% or equivalent passing marks.

TIME COMMITMENT (12 hours/week)

6 HOURS
Asynchronous learning time.

6 HOURS
Assignments and projects.

LIVE SESSION
Every weekend.

SELECTION PROCESS

STEP 1: Fill out the Application Form

Fill out an application with details on your professional & educational background.

STEP 2: Review and Shortlisting of Suitable Candidates

Our Admissions Committee will review all applications and will consider the educational and professional background of an applicant. Following this, offer letters will be rolled out so you're assured a great peer group to learn and network with.

STEP 3: Enrollment for Access to Prep Content

Make a quick block payment with assistance from our Loan partners where required, receive immediate access to the prep content and begin your