

APPLIED TECH CURRICULUM

Apply Artificial Intelligence in frontier fields of human exploration



SPACE TECHNOLOGY



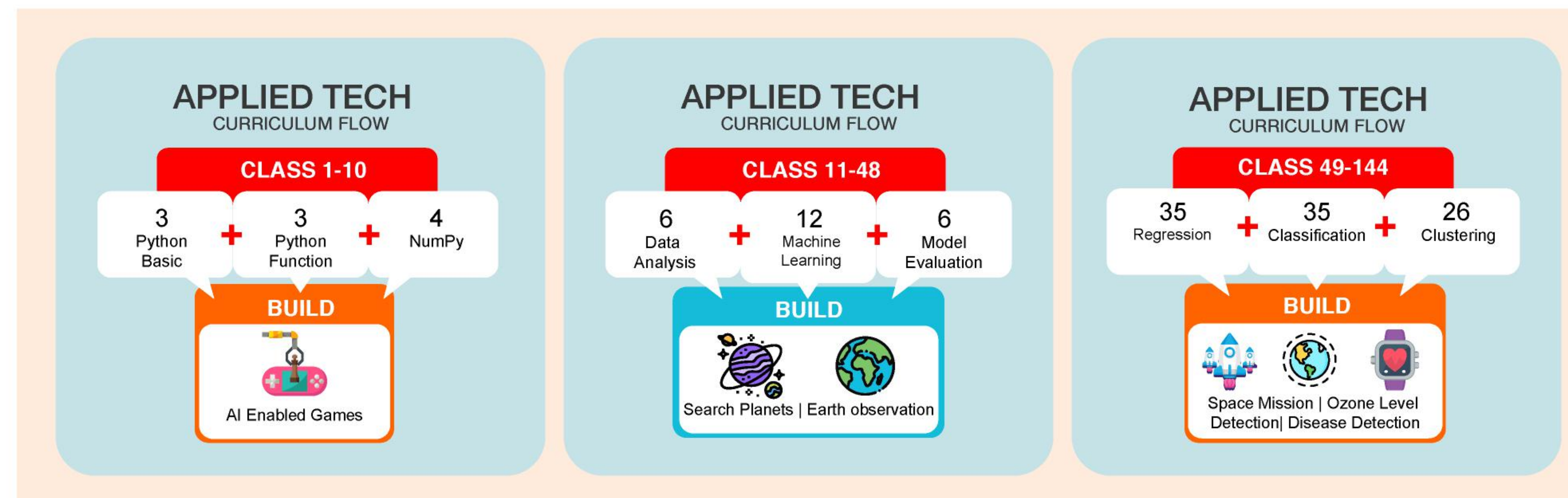
SELF-DRIVING CARS



LIFE TECHNOLOGY

As a science student, the Applied Tech has given a new dimension to my learning. Now learning Physics and seeing its application in space is amazing. It has changed my perspective towards learning. - Sohan Shivare, Age 15

"Solve the problems the world has not solved yet using Artificial Intelligence Applied Tech course at WhitehatJr enables students to push boundaries of human imagination by learning cutting edge technology in fields like Space Science, Self-Driving Cars & Life Science"



Whitehat Jr is created by Alumni from

Google

Boston
Consulting
Group

Discovery
Networks

IIM
Bangalore

IIT
Bombay

PYTHON BASICS, EXPLORATORY DATA ANALYSIS (EDA) AND MACHINE LEARNING (CLASSIFICATION)

CLASS	CONCEPT LEARNING	BUILDING SKILLS
T	Python Basics Data Types & Variables	Python Programming
1	Python Basics Operations on Variables	Python Programming
2	Python Basics Loops	Python Programming
3	Python Basics Conditional Statements	Python Programming
4	Python Basics Functions	Python Programming
5	Python Operations on String	Python Programming
6	Python String Formatting	Python Programming
7	Python Lists List Creation	Python Programming
8	Python Lists List Operations	Python Programming
9	Python Lists List Comprehensions	Python Programming
10	NumPy Arrays Array Creation	Python For Machine Learning & Deep Learning
11	NumPy Arrays Operations on NumPy arrays	Python For Machine Learning & Deep Learning
12	Descriptive Statistics Mean, Median, Mode, Min & Max Values	Statistics
13	Pandas Series Series Creation	Python For Machine Learning & Deep Learning
14	Pandas Series Operations on Pandas Series	Python For Machine Learning & Deep Learning
15	Pandas DataFrames DataFrame Inspection	Python For Machine Learning & Deep Learning
16	Pandas DataFrames DataFrame Slicing	Python For Machine Learning & Deep Learning

CLASS	CONCEPT & LEARNING	BUILDING SKILLS
17	Pandas DataFrames Operations on DataFrame	Python For Machine Learning & Deep Learning
18	Pandas DataFrames Merging & Joins	Python For Machine Learning & Deep Learning
19	Univariate Analysis Continuous Data (Matplotlib Plots)	Exploratory Data Analysis
20	Univariate Analysis Continuous Data (Seaborn Plots)	Exploratory Data Analysis
21	Univariate Analysis Categorical Data (Matplotlib Plots)	Exploratory Data Analysis
22	Univariate Analysis Categorical Data (Seaborn Plots)	Exploratory Data Analysis
23	Bivariate Analysis Continuous Data (Matplotlib Plots)	Exploratory Data Analysis
24	Bivariate Analysis Continuous Data (Seaborn Plots)	Exploratory Data Analysis
25	Bivariate Analysis Categorical Data (Matplotlib Plots)	Exploratory Data Analysis
26	Bivariate Analysis Categorical Data (Seaborn Plots)	Exploratory Data Analysis
27	Bivariate Analysis Time-Series Data Introduction	Exploratory Data Analysis
28	Bivariate Analysis Time-Series Data (Date Formatting)	Exploratory Data Analysis
29	Bivariate Analysis Pivot Tables	Exploratory Data Analysis
30	Cartograms Cartograms - Folium Maps	Exploratory Data Analysis
31	Binary Classification	Machine Learning Classification
32	Decision Tree & Random Forest Introduction	Machine Learning Classification

CLASS	CONCEPT & LEARNING	BUILDING SKILLS
33	Random Forest Classifier Data Cleaning	Machine Learning Classification
34	Random Forest Classifier Data Normalisation	Machine Learning Classification
35	Random Forest Classifier Model Deployment	Machine Learning Classification
36	Random Forest Classifier Cross Validation	Machine Learning Classification
37	Random Forest Classifier Confusion Matrix	Machine Learning Classification
38	Random Forest Classifier Classification Report	Machine Learning Classification
39	Random Forest Classifier Feature Engineering	Machine Learning Classification
40	Random Forest Classifier Feature Encoding	Machine Learning Classification
41	Random Forest Classifier Feature Scaling	Machine Learning Classification
42	Random Forest Classifier Bagging	Machine Learning Classification
43	Game Mechanics Create Rule Play	Machine Learning Classification
44	Oversampling	Machine Learning Classification
45	XGBoost Classifier Model Deployment	Machine Learning Classification
46	XGBoost Classifier Cross Validation	Machine Learning Classification
47	Game Testing Confusion Matrix	Machine Learning Classification
48	Publishing a game Classification Report	Machine Learning Classification

MACHINE LEARNING 1 - REGRESSION AND CLASSIFICATION

CLASS	CONCEPT & LEARNING	BUILDING SKILLS
49	Python Tuples	Python Programming
50	Python Dictionaries	Python Programming
51	Regression Introduction	Machine Learning Regression
52	Decision Trees Regression	Machine Learning Regression
53	Correlation	Machine Learning Regression
54	Random Forest Regressor Data Cleaning	Machine Learning Regression
55	Random Forest Regressor Data Normalisation	Machine Learning Regression
56	Random Forest Regressor Model Deployment	Machine Learning Regression
57	Random Forest Regressor Cross Validation	Machine Learning Regression
58	Random Forest Regressor Model Evaluation	Machine Learning Regression
59	Random Forest Regressor Feature Engineering	Machine Learning Regression
60	Random Forest Regressor Feature Encoding	Machine Learning Regression
61	Random Forest Regressor Feature Scaling	Machine Learning Regression
62	Random Forest Regressor Bagging	Machine Learning Regression
63	Random Forest Regressor Boosting	Machine Learning Regression
64	XGBoost Regressor Model Deployment	Machine Learning Regression

CLASS	CONCEPT & LEARNING	BUILDING SKILLS
65	XGBoost Regressor Cross Validation	Machine Learning Regression
66	XGBoost Regressor Model Evaluation	Machine Learning Regression
67	Multiclass Classification Random Forest Classifier - Data Cleaning	Machine Learning Classification
68	Multiclass Classification Random Forest Classifier - Data Normalisation	Machine Learning Classification
69	Multiclass Classification Random Forest Classifier - Model Deployment	Machine Learning Classification
70	Multiclass Classification Random Forest Classifier - Cross Validation	Machine Learning Classification
71	Multiclass Classification Random Forest Classifier - Confusion Matrix	Machine Learning Classification
72	Multiclass Classification Random Forest Classifier - Classification Report	Machine Learning Classification
73	Multiclass Classification Random Forest Classifier - Feature Engineering	Machine Learning Classification
74	Multiclass Classification Random Forest Classifier - Feature Encoding	Machine Learning Classification
75	Multiclass Classification Random Forest Classifier - Feature Scaling	Machine Learning Classification
76	Multiclass Classification Random Forest Classifier - Bagging	Machine Learning Classification
77	Multiclass Classification Random Forest Classifier - Boosting	Machine Learning Classification
78	Multiclass Classification Oversampling	Machine Learning Classification
79	Multiclass Classification XGBoost Classifier - Model Deployment	Machine Learning Classification
80	Multiclass Classification XGBoost Classifier - Cross Validation	Machine Learning Classification

CLASS	CONCEPT & LEARNING	BUILDING SKILLS
81	Multiclass Classification XGBoost Classifier - Confusion Matrix	Machine Learning Classification
82	Multiclass Classification XGBoost Classifier - Classification Report	Machine Learning Classification
83	Simple Linear Regression Equation of Straight Line	Machine Learning Regression
84	Simple Linear Regression Slope & Rate of Change	Machine Learning Regression
85	Simple Linear Regression Feature Scaling	Machine Learning Regression
86	Simple Linear Regression Data Normalisation	Machine Learning Regression
87	Simple Linear Regression Model Training	Machine Learning Regression
88	Simple Linear Regression Predictions	Machine Learning Regression
89	Simple Linear Regression Cross Validation	Machine Learning Regression
90	Simple Linear Regression Model Evaluation	Machine Learning Regression
91	Simple Linear Regression Data Normalisation	Machine Learning Regression
92	Simple Linear Regression Model Training	Machine Learning Regression
93	Simple Linear Regression Predictions	Machine Learning Regression
94	Simple Linear Regression Cross Validation	Machine Learning Regression
95	Simple Linear Regression Model Evaluation	Machine Learning Regression
96	Simple Linear Regression Multicollinearity	Machine Learning Regression

MACHINE LEARNING 2 - REGRESSION, CLASSIFICATION AND CLUSTERING

CLASS	CONCEPT & LEARNING	BUILDING SKILLS
97	Simple Linear Regression Feature Elimination	Machine Learning Regression
98	Simple Linear Regression Feature Encoding	Machine Learning Regression
99	Probability	Inferential Statistics
100	Probability Distribution Function	Inferential Statistics
101	Random Variables	Inferential Statistics
102	Bernoulli's Theorem	Inferential Statistics
103	Logistic Regression Sigmoid Function	Machine Learning Classification
104	Logistic Regression Likelihood Function	Machine Learning Classification
105	Logistic Regression Odds & Data Normalisation	Machine Learning Classification
106	Logistic Regression Model Training	Machine Learning Classification
107	Logistic Regression Predictions	Machine Learning Classification
108	Logistic Regression Cross Validation	Machine Learning Classification
109	Logistic Regression Model Evaluation	Machine Learning Classification
110	Multivariate Logistic Regression Model Training	Machine Learning Classification
111	Multivariate Logistic Regression Predictions	Machine Learning Classification
112	Multivariate Logistic Regression Model Evaluation	Machine Learning Classification

CLASS	CONCEPT & LEARNING	BUILDING SKILLS
113	Multivariate Logistic Regression Multicollinearity	Machine Learning Classification
114	Multivariate Logistic Regression Feature Elimination	Machine Learning Classification
115	Multivariate Logistic Regression Feature Encoding	Machine Learning Classification
116	Hyper-Parameter Tuning	Machine Learning Classification
117	Naive Bayes Probability	Machine Learning Classification
118	Naive Bayes Conditional Probability	Machine Learning Classification
119	Naive Bayes Bayes Theorem	Machine Learning Classification
120	Naive Bayes Categorical Data	Machine Learning Classification
121	Naive Bayes Classification Model Deployment	Machine Learning Classification
122	Naive Bayes Classification Model Evaluation	Machine Learning Classification
123	K-Means Clustering K-Means Algorithm	Machine Learning Clustering
124	K-Means Clustering K-Means++ Algorithm	Machine Learning Clustering
125	K-Means Clustering Visualising K-Means Algorithm	Machine Learning Clustering
126	K-Means Clustering Cluster Tendency	Machine Learning Clustering
127	Hierarchichal Custering Hierarchical Clustering Algorithm	Machine Learning Clustering
128	Hierarchichal Custering Visualisation of the Algorithm (Dendrograms)	Machine Learning Clustering

CLASS	CONCEPT & LEARNING	BUILDING SKILLS
129	Hierarchichal Custering Types of Linkages	Machine Learning Clustering
130	Hierarchichal Custering Slicing Dendograms	Machine Learning Clustering
131	Hierarchichal Custering Analyses of Clusters	Machine Learning Clustering
132	Support Vector Machines Introduction	Machine Learning Clustering
133	Support Vector Machines Polynomial Kernel Part 1	Machine Learning Clustering
134	Support Vector Machines Polynomial Kernel Part 2	Machine Learning Clustering
135	Support Vector Machines Radial Kernel Part 1	Machine Learning Clustering
136	Support Vector Machines Radial Kernel Part 2	Machine Learning Clustering
137	Principle Component Analysis Data Normalisation	Machine Learning Clustering
138	Principle Component Analysis Feature Scaling	Machine Learning Clustering
139	Principle Component Analysis Matrices	Machine Learning Clustering
140	Principle Component Analysis Determinants	Machine Learning Clustering
141	Principle Component Analysis Variance	Machine Learning Clustering
142	Principle Component Analysis Finding Principle Components	Machine Learning Clustering
143	Principle Component Analysis Single Value Decomposition	Machine Learning Clustering
144	Principle Component Analysis Data Visualisation	Machine Learning Clustering