ACE Online Boot Camp Curriculum

Day : 1 (3 Hours)

Session 1: Setting Sail: Orientation - 20 minutes

- Set the stage for our data expedition.
- Opportunities, challenges, and discoveries in AI & ML

Session 2: AI/ML Job and Study Prospects - 20 minutes

- Job Market Overview:
  - Navigate the current landscape of AI/ML job opportunities.
  - Understand the demand and skill sets sought by employers.
- Study Pathways:
  - Explore educational avenues for diving deep into AI/ML.
  - Uncover study programs, certifications, and degrees.

Session 3: Introduction to AI/ML Jargon - 30 minutes

- A whirlwind tour of AI/ML jargon.
- Decode terms, algorithms, and concepts in an engaging way.

Session 4: Eagle's eye view of AI/ML Landscape - 90 min

- Connect the threads of the AI/ML story, from showdown to unleashed relevance and the marvellous future.
- Understand how these elements converge to shape the broader landscape.

Session 5: AI/ML Applications Across Domains- 20 min

- Applications across industries: Healthcare, Finance, Marketing, and more.
- Reflect and imagine the AI/ML-powered future

Interactive Q&A :

- Open the floor for questions and discussions on career paths.

Day : 2 (6-7 Hours)

Session 1: The Generic Modelling Framework (90 minutes)

Unveiling the Black Box: The Foundation of Predictive Magic

- Introduction:
  - Explore the magic behind predictive modelling.
  - Understand the generic framework powering various models.
- Building Blocks:
  - Break down the key components: Features, Labels, Training, and Testing.
  - Witness how algorithms learn and make predictions.
- Live Demo:
  - Walk through a simple model building exercise.
  - Witness the magic unfold as predictions come to life.

Session 2: Predicting the Future: A Regression Odyssey (90 Min)

- Introduction to Regression:
  - Understand the continuous world of predictions.
  - Explore where and how regression fits into the modelling landscape.
- The Case Study Unveiled:
  - Present a real-world regression challenge: House Price Prediction.
  - Decipher the dataset and set the stage for the modelling journey.
- Hands-On Exploration:
  - Guided hands-on session: Building a regression model.
  - Navigate challenges and make predictions on house prices.
- Results and Interpretation:
  - Unveil the model's predictions and interpret the results.
  - Understand the impact of the regression model.

Session 3: Decoding Patterns: A Classification Adventure (90 Minutes)

- Introduction to Classification:
  - Transition to the world of classes and labels.
  - Discuss the significance of classification in machine learning.
- The Case Study Challenge:
  - Present a classification puzzle: Handwritten Digit Classification.
  - Define classes and understand the dataset.
- Hands-On Adventure:
  - Participants get hands-on, building a classification model.
  - Overcome challenges and fine-tune the model for digit classification.
- Evaluation and Impact:
  - Evaluate the model's classification performance.
  - Discuss the real-world impact of accurate digit classification.

- Interactive Q&A :
    - Open the floor for questions and discussions on case studies.

Session 4: *Neighbors Know Best: The KNN Quest* (90 min)

- Introduction to KNN:
    - Unravel the concept of K-Nearest Neighbors.
    - Explore why proximity matters in KNN.
- The KNN Challenge:
    - Introduce a unique KNN case study: Predicting Similar Products.
    - Dive into the dataset and set the stage for the KNN challenge.
- Interactive KNN Exploration:
    - Participants experiment with KNN.
    - Analyse results and understand the power of neighbors in predicting similar products.

- Wrap-Up and Reflection:
    - Recap the journey through the generic modeling framework.
    - Encourage participants to reflect on the case studies.