SHEF SOLUTIONS

DATA SCIENCE & AI

Advanced Certification Program

In collabration with

Microsoft

Understand Generative AI and its potential

Leverage the Microsoft Advantage with Professional Level Training from Microsoft

Exposure to prominent tools:

ChatGPT   Bard

DALL·E   Midjourney

and more

About The Course

In partnership with Microsoft, the Advanced Data Science and AI Program by **Shef Solutions** propels your data science and AI career, providing world-class training and essential skills. Offering comprehensive instruction in sought-after data science and machine learning skills, the program ensures hands-on experience with vital tools like Python, SQL, Excel, machine learning, Tableau, Generative AI, prompt engineering, ChatGPT, and more. Designed to be job-ready, the course leverages our 10+ years of experience in the US IT recruitment field, ensuring that upon completion, you are well-equipped to excel in the industry. Achieve expertise in data science through a deep exploration of data interpretation nuances, mastery of machine learning, and the acquisition of powerful programming skills, elevating your career to new heights.

About Microsoft and Shefsolutions Collaboration

Microsoft is a leading technology company offering a wide range of technology and consulting services. Each year, Microsoft invests heavily in research and development, with an annual R&D budget of over $20 billion. Microsoft has achieved numerous accolades, including three Turing Awards, 10 US National Medals of Technology and Innovation, and 10 US National Medals of Science.
A partnership between Microsoft and **Shef Solutions** introduces students to the best-in-class applied learning experience, making them experts in data and AI. In collaboration with Microsoft, this program delivers a top-notch, industry-relevant curriculum and prepares students for any job role in the data science domain.

WHY ARE Data Science and AI important?

Data Science, Machine Learning and AI is redefining our way of life, enabling machines to do what people once thought only humans could do. It is also revolutionizing the way we do business. The global ML market is projected to be $30.6B by 2024, growing annually by 43%.

In terms of revenue, the global DS, ML, AI market is projected to exceed value of US$ 2.8 Bn by 2030. Companies Will Invest Up to $1.1 Trillion in IoT by 2023.The Total Economic Impact of IoT Could Range Between $4 and $11 Trillion per year by 2025.

Virtual Personal Assistants

Online Fraud Detection

Search Engine Result Refining

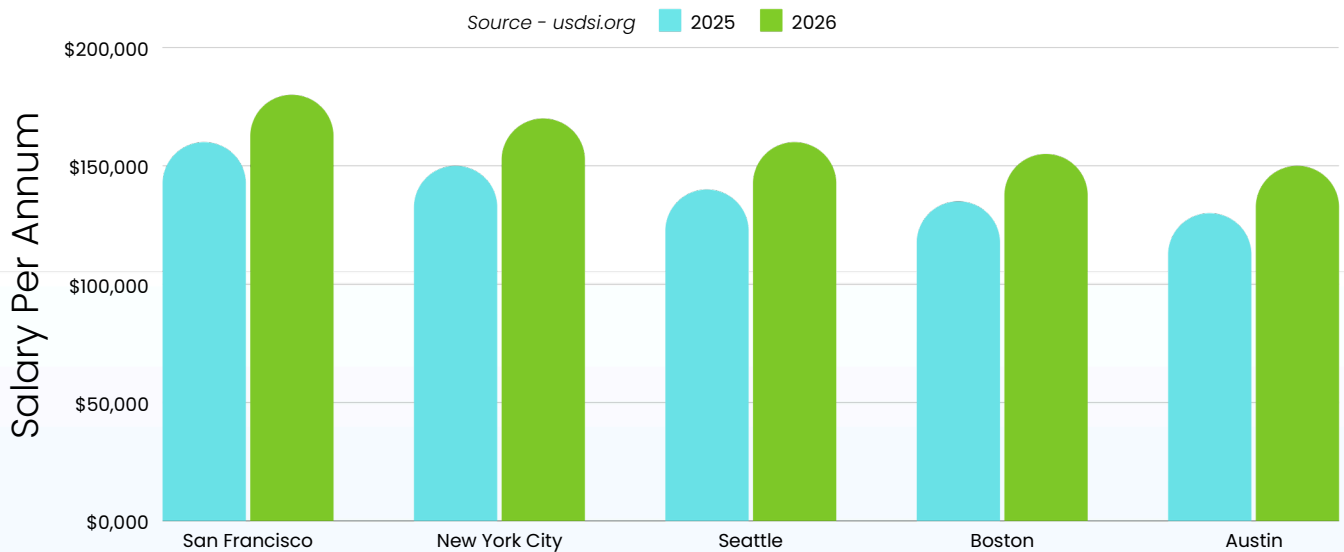**Email** Spam & Malware Filtering

Social Media Services

Product Recommendations
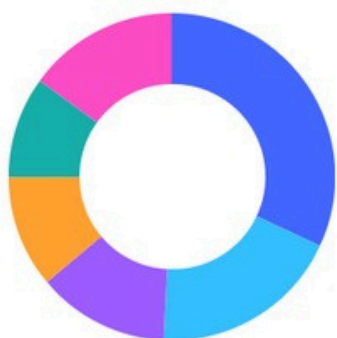
CURRENT TRENDS IN DS,ML-AI JOB MARKET

In the U.S., Data Science, Machine Learning, and AI are booming, with a 36% job growth projected from 2023 to 2033, adding nearly 3 million jobs. Entry-level salaries range from $70,000 to $90,000, while experienced professionals can earn $120,000 to $160,000. High-demand roles include Machine Learning Engineers, Data Scientists, AI Research Scientists, and NLP Engineers. The integration of AI and ML is driving innovation and economic growth, highlighting the importance of acquiring these skills.

Source - usdsi.org ■ 2025 ■ 2026

BATCH PROFILE

This program caters to working professionals from variety of industries and backgrounds; the diversity of our students adds richness to class discussions and infractions.

Industry

- ■ Information Technology - 32%
- ■ BFSI - 19%
- ■ Software product - 13%
- ■ Pharma & Healthcare - 11%
- ■ Retail - 10%
- ■ Others - 15%

Companies Hiring

PROGRAM HIGHLIGHTS

This 6-month program is uniquely designed by Shefsolutions, Microsoft and industry leaders to help you learn exactly what the job market demands.

Industry-recognized certificate from Microsoft and Shefsolutions

100% Job Placement through our in-house recruitment agency with over 250 hiring partners

Industry-relevant skills for new age IoT , ML, DS & AI

Hands-on program and Industry-Grade Capstone Projects

Designed by leading academic and industry experts along with Microsoft

PROGRAM BENEFITS

Certificate/Credentials

Advanced Data Science & AI Program completion certificate and Industry-recognized certificate from Microsoft

Curriculum

Core curriculum delivered in live online classes by industry experts and Microsoft

Practical Knowledge

Live interactive sessions on the latest AI trends, such as ChatGPT, Generative AI, prompt engineering, and more.

Hands on Projects

Capstone from various domains and industry relevant projects

Familiarity with essential tools

Gain exposure to Python, Tableau, SQL, ChatGPT, OpenAI, Dall-E and other prominent tools.

Support and Guidance

Lifetime access to self-paced learning content through our Learning Management System

Personalised Attention

Small batch sizes to ensure that each student receives personalized attention and tailored instruction

Doubt Clearing Sessions

24x7 subject matter expert support for your technical/non-technical doubts

Immersive Learning Experience

A unique learning ecosystem to give you an offline-like immersive experience

Career Guidance and 100% Placement Support

100% Job assistance through our in-house recruitment agency with over 250 hiring partners

Program Outcomes

- Understand Generative AI, its landscape, and practical applications

- Learn about prompt engineering, explainable AI, conversational AI, large language more

- Perform scientific and technical computing using the SciPy package and its sub-packages such as Integrate, Optimize, Statistics, IO, and Weave

- Grasp fundamentals of Excel analytics functions and conditional formatting

- Understand the tools and techniques used in business analysis planning and monitoring

- Understand and use linear and non-linear regression models and classification techniques for data analysis

- Learn to visualize data using Tableau and Power BI and become proficient in building interactive dashboards

- Gain an in-depth understanding of data structure and data manipulation

- Apply effective prompt engineering techniques to improve the performance and control the behavior of generative AI models

- Obtain a comprehensive knowledge of supervised and unsupervised learning models such as linear regression, logistic regression, clustering, dimensionality reduction, K-NN, and pipelines

- Master the concepts of recommendation engines and time series modeling Gain practical

- mastery over principles, algorithms, and applications of machine learning

- Gain expertise in mathematical computing using the NumPy and scikitlearn package

PROGRAM CURRICULUM LEARNING PATH

Data Analysis & Data Science with Python

Module- 1: Basics of Python Programming

- ✓ Introduction to Python
- ✓ Variables and Datatypes
- ✓ Conditional Statement
- ✓ Commands in Python
- ✓ Loops in Python
- ✓ Functions in Python
- ✓ OOPs Concept

Module- 2: Libraries of Python Programming with EDA

- ✓ Numpy
- ✓ Pandas
- ✓ Matplotlib
- ✓ Seaborn
- ✓ Data Cleaning

Applied Maths, Statistics and Machine learning

Module- 3: Statistics for Data Science

- ✓ Introduction to statistics
- ✓ Descriptive and Inferential Statistics
- ✓ Percentage vs Percentile
- ✓ Standard Deviations and Z_score
- ✓ Types of Distribution
- ✓ Hypothesis Testing

Module- 4: Machine Learning- Supervised

- ✓ Introduction & Types of machine learning
- ✓ Supervised ML
- ✓ Linear Regression ML Algorithm
- ✓ Logistic Regression
- ✓ KNN Algorithm
- ✓ SVM
- ✓ Decision Tree Algorithm
- ✓ Random Forest Algorithm
- ✓ Ensemble Learning
- ✓ Hyperparameter tunning

PROGRAM CURRICULUM LEARNING PATH

Module- 5: Machine Learning- Unsupervised

- ✔ Introduction to the Unsupervised ML Algorithm
- ✔ Clustering Techniques
- ✔ K Means Clustering Hierarchical Clustering
- ✔ Dimensionality Reduction- PCA

Module- 6: Deep Learning and AI

- ✔ Introduction to Deep Learning
- ✔ Artificial Neural Network
- ✔ Convolutional Neural Network
- ✔ Recurrent Neural Network
- ✔ LSTM
- ✔ Natural Language Processing

Database Management with MySQL

Module- 7: MySQL

- ✔ Understanding databases
- ✔ Reading the files and database
- ✔ Performing CRUD Operation on Database
- ✔ Working with Build in database
- ✔ Database Connectivity
- ✔ Joins Operation
- ✔ Subquery

Data Visualization & Story Telling

Module- 8: Tableau

- ✔ Create the Sheets/Dashboards
- ✔ Create a Table of Contents Sheet
- ✔ Design the Table of Contents
- ✔ Add Navigation Actions
- ✔ Set Up Dashboard for Table of Contents
- ✔ Test the Navigation Links

Module- 9: Power Bi and Google Data Studio

- ✔ Create the Reports/Pages
- ✔ Create a Table of Contents Page
- ✔ Design the Table of Contents
- ✔ Add Buttons or Text for Navigation
- ✔ Set Up Bookmarks
- ✔ Add Action Links to Buttons/Text

PROGRAM CURRICULUM LEARNING PATH

AI and Data Engineering with MLOps and Cloud Integration

Module- 10: Data Engineering Tools

Introduction to Data Engineering

Data Collection

Data Storage

Data Processing

- ✓ Data Integration
- ✓ Data Pipelines
- ✓ ETL (Extract, Transform, Load)

Module- 11: NPL with MLOPS

- ✓ Cloud Essentials: Intro to AWS
- ✓ Working with AWS: case study
- ✓ MLOps: Introduction
- ✓ MLOps: Data Lifecycle
- ✓ MLOps: Model Lifecycle

- ✓ MLops Assignment
- ✓ Advanced NPL
- ✓ MLOps + Deployment: NPL (Theory)
- ✓ MLOps + Deployment: NPL (Assignment)

Module- 12: AI Strategy

- ✓ AI Strategy Framework, Structured Problem Solving/ Data Storytelling

- ✓ Mapping ML with Data architecture strategy
  Executing AI Strategy
- ✓

- ✓ AI strategy: Assignment

Explainable AI

Prompt Engineering

Advanced Prompt Engineering Techniques

Microsoft **Azure Data Fundamentals**

CAPSTONE & LIVE SESSION PROJECLTESARNING PATH

The projects and assignments will help you accumulate real-world experience in different industries.

Automotive Industry

Education Industry

Banking Sector

Entertainment Industry
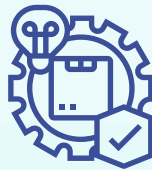
Healthcare Industry

Manufacturing Segment

Retail Industry

Production industry

FinanceSector

CAPSTONE PROJECT

Industry projects will be a part of your Advanced Certification In Applied Data Science, Machine Learning & AI to consolidate your learning. Industry projects will ensure you have the real-world experience to start your career in DS, ML-AI.

- 10+ Essential Tools
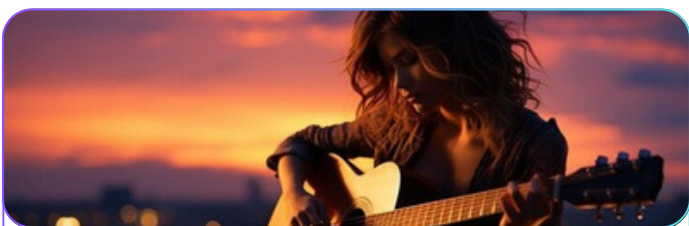- Designed by Industry Experts
- Get Real-world Experience

Sales Analysis

Utilize Python to analyze a clothing company's sales data for the fourth quarter across states to help the company make data-driven decisions for the coming year.
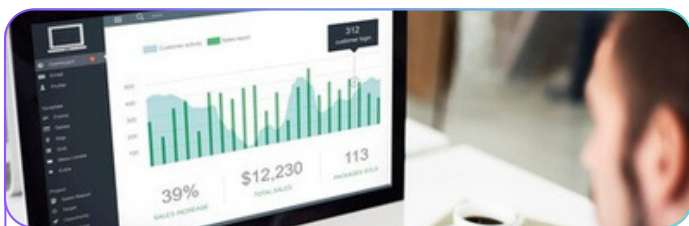

Employee Performance Analysis
Create ML programs to understand different factors affecting employee turnover. Use clustering, the SMOTDE technique, and the K-fold cross-validation model to analyze performance and suggest employee retention strategies

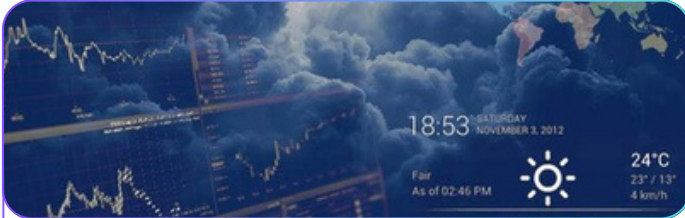### Classification of Songs

Perform exploratory data analysis and cluster analysis to create personalized song lists and an efficient recommendation system.

Interactive Sales Dashboard

Create an interactive sales dashboard for an apparel OEM in Tableau for the sales department to use for ad-hoc analysis and reporting.

Disclaimer: Projects varies depending on learner's preferred domain

CAPSTONE PROJECT

Weather Prediction

Create a classification model using ten years of rainfall data to predict the weather for different locations across the world.

Credit Card Fraud Analysis

Utilize data science and machine learning methodologies to identify fraudulent credit card transactions so that end customers are not charged for items they did not purchase

Auto Image Captioning

Automatic image captioning is widely used by search engines to retrieve and show relevant search results to the users. For example - to categorize personal multimedia collections, for automatic product tagging in online catalogs, and other areas of business and researches.

Telecom Churn Prediction

You will be provided with the 'Telecom Churn' dataset. Use it to create a model to predict which customer will switch to other telecom service providers, based on the relevant customer data.

Twitter Sentiment Analysis

Analyzing tweets helps us understand people's thoughts and sentiments on popular topics. In this project, you'll use Tweepy, TextBlob, NLTK, and other NLP libraries to analyze sentiments from trending Twitter tags.

Credit Score Prediction

A bank plans a new loan scheme and wants to analyze customer data to see how earnings relate to credit scores. Using clustering, they aim to identify high credit score clusters to guide the new loan scheme.

Disclaimer: Projects varies depending on learner's preferred domain

CAPSTONE PROJECT

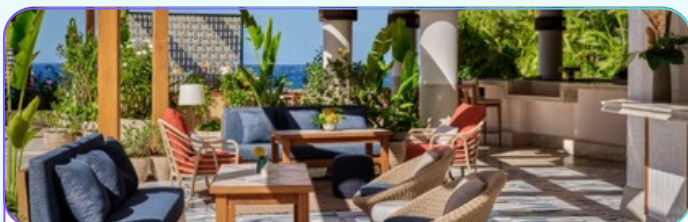
Housing Price Prediction

Using the 1990 California census data, which includes various demographics, we need to create a model with Pandas, SciPy, and NumPy to predict housing prices based on the provided details.

COVID Analysis in US

The COVID-19 pandemic is a major global challenge, with cases rising daily. To understand its impact, web scrape data from the official government website and compare COVID trends in the US with global trends.

Forecast Air Passenger Traffic

An Airline called Star Air has the data of its passengers across months. The data is classified in date/time and the passengers travelling per month. Build a model to forecast the demand in Airplanes.

Resort Menu Prediction

EmeraldOyster faces high meal costs at its resort restaurants. To address this, identify customers' economic classes using collected data to help redesign the menu and choices accordingly.

Analyze & Visualize Employee Attrition

Employee retention is crucial for company growth. Identify factors causing attrition, explore reasons for departures, and predict employee turnover by creating a Streamlit web app that collects user inputs online.

Big Mart - Customer Segmentation

Big Mart's data scientists have gathered 2013 sales data for 1559 products across 10 stores. The CEO wants to understand customer demographics and retention to help the marketing team develop targeted strategies.

Disclaimer: Projects varies depending on learner's preferred domain

Tools Covered

SciPy

pandas

Power BI

PySpark

python

Spark SQL

SQL

TensorFlow

Excel

git

jupyter

matplotlib

NumPy

ChatGPT

Midjourney

PLACEMENT ASSISTANCE PROGRAM

ShefSolutions Inc., the parent company of ShefSolutions LLC, is dedicated to providing comprehensive job assistance to students who complete their courses. With over a decade of experience in the recruitment industry, we understand the evolving job market and emerging industry requirements. This expertise ensures our courses are in high demand and tailored to meet industry standards, making students job-ready upon completion.

Our program bridges the gap between education and employment by offering career counseling, resume building, interview preparation, and direct connections to potential employers. We continuously update our curriculum to reflect the latest trends and skills sought by employers, ensuring our students are well-prepared and connected to numerous job opportunities. **We are proud to have an impressive placement rate of 80%,** demonstrating our commitment to student success.

At ShefSolutions, we empower our students with the tools and resources they need to succeed in their careers. Our commitment to their success is unwavering, and we strive to provide an educational experience that opens doors to promising career paths. Through our dedicated efforts, we aim to make a significant impact on the lives of our students, helping them achieve their professional goals and aspirations.

100% PLACEMENTS ASSISTANCE

Dedicated Placement Team

Assign dedicated coordinators to assist in job searches and provide personalized support. Leverage a network of over 250 hiring partners to connect students with potential employers.

Leadership Skill DevelopmentSessions

Recurring training sessions with experts to help learners Develop Interpersonal & Leadership Skills.

1-on-1 Career Mentoring Sessions

One-on-one Career Mentoring sessions on how to develop the right skills and attitude to secure a dream job.

Exhaustive Interview Preparation

Expert tips, sample interview questions, mock interviews with constructive feedback from industry experts to gain hands on experience of technical rounds, HR round, and more.

Job Search Assistance & Job Feeds

Grant access to exclusive job portals with listings from ShefSolutions Inc.'s network of hiring partners. Send personalized job alerts based on students' skills and career interests.

Profile Building Assistance

A dedicated Career Coach will provide expert tips on how to create an attractive, relevant resume and LinkedIn profile.

OUR TOP RECRUITERS

accenture · EY · G · verizon

Tech Mahindra · Alphabet · amazon · Honeywell

wipro · IBM · KPMG · DELL

Microsoft · SAMSUNG · Mu Sigma DO THE MATH · CISCO

Apple · intel · ORACLE · Walmart

OUR ALUMNI WORK AT

Capgemini · Cognizant · Deloitte. · genpact

Tech Mahindra · Alphabet · amazon · Honeywell

wipro · ADP · KPMG · IKEA

Humana · intel · ORACLE · ACADIA HEALTHCARE

accenture · EY · CITI · verizon

WHAT'S IN IT FOR YOU

After completing the program, you will receive an industry recognized Course Completion Certificate in **Advanced Data Science and AI** from ShefSolutions, along with a **Microsoft Azure** Certification.

Candidates will be able to explore a wide range of AI jobs available globally, such as...

Entry-Level:

- AI Research Engineer
- Data Analyst
- Associate Machine Learning Engineer
- Research Analyst

Mid Level:

- Machine Learning Engineer
- AI Software Engineer Associate
- Data Scientist
- IoT Product Manager

Senior Level:

- Sr. Data Scientist
- Machine Learning Research Scientist
- Deep Learning Expert
- Chief Internetof ThingsOfficer

Certificate

Upon completion of this Advanced Program, you will receive industry recognized certificates from **Microsoft** and **Shefsolutions** in the Data Science courses in the learning path. These certificates will testify to your skills as an **expert in Data Science & AI.**

SHEF SOLUTIONS.inc

ShefSolutions Inc. is a leading technology consulting and staffing firm headquartered in Dover, Delaware. We specialize in providing high-quality consulting services and staffing solutions across various industries, including IT, healthcare, project management, and more. Our team of experienced and dedicated professionals is committed to delivering innovative solutions that drive success for our clients.

At ShefSolutions Inc., we pride ourselves on our stability, strength, and national reach. Our mission is to empower businesses by connecting them with top talent and providing strategic consulting services that enhance their operational efficiency and growth. We believe in building long-term relationships with our clients and partners, ensuring mutual success and continuous improvement.

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