



GUVI



Google for Education
Partner

IIT-M Advanced Programming Professional & Master Data Science

Now learn in தமிழ்*, हिन्दी* & English

5 Months Weekend / 3 Months Weekday

Live Classes with Assured
Job Opportunities



About IIT MADRAS



The Indian Institute of Technology Madras or IIT Madras is a public Technical and Research University established by the Government of India. IIT-M is recognized globally and holds the laureate of being the No.1 Engineering University in India. With a faculty of international fame, bolstered by a highly motivated and profound student community, IIT Madras stands true as an Institute of Eminence.

GUVI In A Glance



Grab Ur Vernacular Imprint-GUVI (an IIT-Madras Incubated Company) is World's First Vernacular Ed-Tech Learning Platform. Introduced by Ex PayPal Employees, GUVI empowers students to master programming skills with the comfort of their native language. Its mission is to impart technical skills to all through focussed pedagogical tools.

About the Co-Founders



Sridevi

Co – Founder at GUVI

20+ years of Technical Expertise



Tech Women Entrepreneur who was selected
For Google Developers' Launchpad Program



Arun Prakash

CEO & Founder at GUVI

20+ years of Technical Expertise



& more

Built 7 Products from Scratch Mentored 1000+
students Hosted 200+ sessions & 25+ webinars



Bala Murugan

Co – Founder at GUVI

17+ years of experience with IT industry



Technologist with 9+ years of Entrepreneurial
experience & Member of the Syllabus Sub-
Committee at Anna University

Window to Data Science Program

Data Science Course from GUVI is a comprehensive program focusing on top-notch, in-demand fields. This decade foresees progressive inflation in the data science and analytics field, projecting a boom from **3.64+Lakh to 27.2+ Lakh** job opportunities. GUVI offers this 100% job supporting Data Science program as a blend of online master classroom sessions and self-paced course learnings, intending to meet these job requirements. Learn from the best of Industry Experts and grace a career as a Data Scientist/Analyst by acquiring esteemed recognition from IIT-M & certification for Advanced Programming.

Why GUVI's Data Science Class?



175% Highest Hike



₹21 Lakhs Highest Salary



40% Hike in Demand



600+ Hiring Partners



**360+ Best Industry
Experts**



**Assured
Job Opportunities**

Data Science Course

Weekdays/Weekend LIVE Classes



Hands-on Industry Projects + Bi-weekly
Hackathons



Technical Mentorship by Industry Experts +
Periodic developer Meetups



Practise on Coding Practise Platforms CodeKata,
WebKata, MicroArc



Mock interviews + Group Discussion Test



Live Cumulative Coding Test + Capstone Project



Proceed to Placement Phase

Placement Phase

Tech-Skilled DS Learner



Enters Placement Window



Exclusive Skill-based
Job Notifications



Company-specific Expectations Setting
(Hits Interviews Arranged)



Tech-Guidance +
100% Placement Support

Top skills you'll learn!

- ✓ Best Statistical programming language skills with Python.
- ✓ Excellent database querying skills.
- ✓ Good understanding of Analytical tools & Statistics.
- ✓ Conceptual clarity towards Predictive performance & algorithm optimization.
- ✓ Master data visualization & communication skills.

Technologies covered



Data
Science



Python



SQL



NumPy



Pandas



NLP



Machine
Learning



Data
Visualization



Computational
Thinking

Self-paced Courses – Add on



Power BI

& more....

Program Curriculum

Module O: Pre- Bootcamp

This week you will go through the basics of competitive programming and data science as well as we will come across the current industry trends in Data Science

- Introduction to Programming
- What is Data Science and what is Machine Learning?
- Competitive programming with Python (Codekata)
- Experts talk on industry trends
- Main Bootcamp flow

Module 1 : Python

We will go through the basics of python with all essential beginner friendly concepts of python programming like datatypes, loops, data structures and functions, followed by assessments and assignments

- Why python ?
- Python IDE
- Hello World Program
- Variables & Names
- String Basics
- List
- Tuple
- Dictionaries
- Conditional Statements
- For and While Loop , TRY AND EXCEPT
- Numbers and Math Functions
- Common Errors in Python

Module 2 : Python Advanced

Since we have essential basics of python we will see some advanced concepts like comprehensions, file handling, regular expressions, object oriented programming, pickling and many more essential concepts.

- Functions as Arguments
- List Comprehension
- File Handling
- Debugging in Python
- Class and Objects
- Lambda, Filters and Map
- Regular Expressions
- Python PIP
- Read Excel Data in Python
- Iterators
- Pickling
- Python JSON

Module 3 : Algorithmic thinking with Python

We will explore the need of algorithmic thinking and the necessity of efficient coding, we will drive through data structures and algorithms along with memory management techniques

- Introduction to algorithmic Thinking
- Algorithm Efficiency and time complexity
- Example algorithms – binary search, Euclid's algorithm
- Data structures – stack, heap, and binary trees
- Memory Management/Technologies
- Best Practices – Keeping it simple, dry code, naming Conventions, Comments, and docs.
- Assessment

Module 4 : Data handling in Python – Pandas & MongoDB

Since we need to handle huge amounts of data, we will be implementing data handling techniques with Pandas library. And we will explore the different miscellaneous functions of Pandas library in detail.

- Introduction to Pandas
- Series Data Structure – Querying and Indexing
- DataFrame Data Structure – Querying, Indexing, and loading
- Merging data frames
- Group by operation
- Pivot table
- Date/Time functionality
- Example: Manipulating DataFrame

Module 5 : SQL

we will dive into the SQL-based databases. We will learn the basics of SQL queries, schemas, and normalization.

- Database-Introduction and Installation,
- Data Modeling
- Normalization and Star schema
- ACID Transactions
- Data Types
- Data Definition Language
(Create,Drop,Truncate,Alter)
- Data Manipulation Language
(Select,Delete,Update,Insert)
- Data Control Language (Grant,Revoke)
- Transaction Control language
(Commit,Revoke,Rollback)
- SQL Constraints(Primary key, Foreign Key,Unique,Not NULL, CHECK,DEFAULT)
- Operators (Arithmetic, Logical, Bitwise, Comparison,Compound)
- Clauses in SQL(Where,Having,Group by, Order by)

Module 6

We will Continue into the SQL-based databases. We will learn the SQL Advanced queries, Join, Date and Time Functions and SubQueries.

- Joins (Inner, Left, Right, Full Join, Equi Join, Non-Equi Join, Self Join)
- Mathematical functions (SQRT, PI, SQUARE, ROUND, CEILING)
- Conversion functions (changing the data types)
- General functions (COALESCE, NVL, NULLIF)
- Conditional expressions (if, case, GO TO, NULL)
- Date and time functions
- Numeric functions
- String Functions
- Subqueries
- Rank and Window Functions
- Integrating Python with SQL

Module 7 : Probability and Statistics with Numpy

We will go through Probability and Statistics whereas they are key to understanding, process and interpret the vast amount of data. We will deal with the basics of probability and statistics like Probability theory, Bayes theorem, distributions etc and their importance. Besides that we will do hands on with Numpy upon those concepts

- Why counting and probability theory?
- Basics of sample and event space
- Axioms of probability
- Total Probability theorem and Bayes Theorem
- Random variables, PMF and CDF
- Discrete Distributions – Bernoulli, Binomial and Geometric
- Expectation and its properties
- Variance and its properties
- Continuous Distributions – uniform, exponential and normal
- Sampling from continuous distributions
- Simulation techniques – simulating in NumPy
- Assessment

Module 8 : Probability and Statistics with Numpy – Continued

We will continue with statistics and probability and we will deal with descriptive and inferential statistics along with Hypothesis testing and lot of other relevant statistics methods

- Inferential statistics – sample vs population
- CLT and its proof
- Chi-squared distribution and its properties
- Point and Interval Estimators
- Estimation technique – MLE
- Interval Estimator of μ with unknown σ
- Examples of estimators
- Hypothesis testing – I
- Hypothesis testing – II
- Hypothesis testing – III
- Assessment

Module 9 : Data Visualisation in Python (Matplotlib/ Seaborn/ Plotly)

Data Visualization is used to understand data in visual context so that the patterns , trends and correlations in the data can be understood. We will do a lot of visualization with libraries like Seaborn, Matplotlib etc inturn that leads to effective story telling.

- Read Complex JSON files
- Styling Tabulation
- Distribution of Data – Histogram
- Box Plot
- Data Visualization – Recap
- Pie Chart
- Donut Chart
- Stacked Bar Plot
- Relative Stacked Bar Plot
- Stacked Area Plot
- Scatter Plots
- Bar Plot
- Continuous vs Continuous Plot
- Line Plot
- Line Plot Covid Data
- Assessment

Module 10 : Data Engineering with Python

It is always needed to analyze the data and preprocess it, since the real world data is not always industry ready, so in this week we will be dealing with a lot of data cleaning and Exploratory data Analysis techniques which is a very crucial stage for any data science project

- Handling missing data
- Techniques to impute missing values
- Encoding the data
- Outlier detection and correction
- Meaningful data transformation
- Assessment

Module 11 : Exploratory Data Analysis with Python

Real world data is always messy and it's very important to understand the statistical nature of data. Exploratory Data Analysis (EDA) is a critical step in the data analysis process, involving the preliminary examination of data to understand its characteristics, uncover patterns, and identify potential insights.

- Descriptive Statistics: Measures of central tendency (mean, median, mode); Measures of dispersion (range, variance, standard deviation); Skewness and kurtosis.
- Univariate Analysis: Histograms, frequency distributions, and kernel density plots; Box plots and violin plots; Probability density functions (PDFs) and cumulative density functions (CDFs).
- Bivariate Analysis: Scatter plots and correlation analysis; Covariance and correlation coefficients; Pair plots and heatmaps.
- Multivariate Analysis: PCA, Multivariate Scatter Plot, MANOVA
- Real World Case Study

Module 12 : Machine Learning with Sklearn

We are going to explore the need of machine learning and its types, Algorithms when to use and how to use essential mathematical intuition along with Evaluation metrics. We will see in detail about regression algorithms.

- Introduction to machine learning
- Expert systems and 6 Jars
- Supervised Learning – Regression and Classification
- Evaluation metrics and measuring accuracy
- Introduction to regression
- Interpreting models
- Feature selection
- Regularization – Ridge and Lasso
- Assessment

Module 13 : Machine Learning with Sklearn – Continued

In continuation to the ML algorithms we are going to see in detail about different classification algorithms along with mathematical intuition and evaluation metrics

- Introduction to classification
- Evaluation metrics – TP, FP, and AUC
- Classification using logistic regression
- Classification using KNN
- Assessment

Module 14 : Machine Learning with Sklearn – Continued

We are going to explore classification algorithms like tree based algorithms in detail like how to interpret trees, pruning and ensemble methods like bragging and boosting etc

- Introduction to decision trees
- Building, pruning, and interpreting trees
- Ensemble techniques – Bagging and boosting
- Random forests
- Boosted trees – Gradient boosting
- Assessment

Module 15 : Machine Learning with Sklearn – Continued

After dealing with a lot of Supervised machine learning algorithms we will compare and get to know when to use what, Besides that we will deal with the do's and don'ts while training an ML model.

- Comparison of supervised techniques – when to use what?
- Do's and Don'ts while training ML models
- Handling imbalanced data
- Undersampling
- Oversampling
- Other methods – ROSE, SMOTE, etc.
- Assessment

Module 16 : Machine Learning with Sklearn – Continued

Now we will explore Unsupervised learning algorithms, why unsupervised ?, when to use it and as well as the essential mathematical intuition

- Introduction to unsupervised learning
- Market Basket Analysis
- K means algorithm
- Assessment

Module 17 : Deep learning

As we move on to more complex problems, such as object recognition and text analysis, our data becomes extremely high dimensional, and the relationship becomes nonlinear. To accommodate this complexity, we move on to building more complex models that resemble our brain.

- Fundamentals of Neural Networks: Limitations of ML; The Neuron; Linear perceptron as neurons
- Feed Forward Neural Networks: Linear Neurons and limitations; Sigmoid, Tanh and ReLU; Softmax
- Learning-I: Gradient Descent; Delta rule and learning rates; Gradient descent with sigmoidal Neurons
- Learning-II: Backpropagation; Stochastic and minibatch; Test set, validation set, and overfitting
- Preventing overfitting

Module 18 : Deep learning with PyTorch

Now that we have a better theoretical understanding of deep learning models, we will spend this module implementing some of these algorithms in PyTorch

- PyTorch Basics: Installation and setup of PyTorch; Tensors and operations in PyTorch
- Training Fundamentals: Autograd; Backpropagation; Gradient Descent; Training Pipeline.
- Regression with PyTorch: Linear Regression; Logistic Regression
- Dataset in PyTorch: Dataset and Dataloader; Dataset Transforms.
- Training Pipeline: Softmax and Crossentropy;
- Activation Functions

Module 19 : Deep Learning with PyTorch continued

Now that we have the basic understanding of PyTorch, we will now dive into discussing the implementation details of a few state-of-the-art deep learning architectures in PyTorch

- Feed Forward Net: Creating basic Neural net; Load Data and train neural net; Evaluation on test set
- CNN: Introduction; Image Filter/Image kernel; Convolution layer and RGB; Pooling Layer;
- Transfer Learning
- Tensorboard
- Save and Load Models

Module 20 : Natural Language Processing

We are going to explore Natural Language Processing (NLP). Given the fact that we have a decent understanding of Machine Learning and Deep Learning, we can now explore the powerful ways to handle the NLP usecases

- Language Understanding: RNNs architecture; RNNs and language models; Generation with RNNs
- Adding more memory: LSTM architecture;
- Encoder Decoder Model with RNN
- Self Attention Networks: Transformers
- Hands on Huggingface: Understanding API integration
- Using Language Models for various tasks: sentiment analysis; Question Answering; NER; Summarization.

Module 21 : Computer Vision

Having a basic understanding of NLP use cases, now we will dive into the Computer Vision Fundamentals. We will discuss state-of-the-art CV problems and their solutions with deep learning.

- Convolution Architecture: Filters; Stacking Multiple Feature Maps; PyTorch Implementation.
- Pooling Layers: Pytorch Implementation
- CNN Architectures overview: LeNet-5; AlexNet; GoogLeNet; VGGNet; ResNet; Xception; SNet
- Implementing a ResNet-34 CNN using PyTorch
- Using pretrained models with PyTorch
- Object Detection: Fully Convolutional Networks, YOLO
- Semantic Segmentation

Module 22 : Model Deployment in AWS Cloud Platform

Having a good understanding of ML, DL and various use cases, we will now discuss the platforms through which we can securely deploy these powerful models on production level. More specifically; we will discuss the fundamentals of AWS services and how to use them efficiently.

- Introduction to AWS
- Cloud Services (EC2, Lambda, S3, RDS etc)
- Hands-on in EC2 instance
- Hands-on in Database in AWS
- Hands-on in S3 storage
- Deploying ML Model as Application in AWS

Module 23 : Putting it together – Solving DS problems

This whole week we are going to work on industry projects which are currently in demand in the guidance of industry experts

- Case Study – I: Credit Card Fraud detection
- Case Study – II: Airline Customer segmentation
- Case Study – III: Product recommendation engine
- Case Study – IV: Chatbot with Huggingface

Module 24 : Mock Interviews

Eventually, it's time to attend the mock interviews which will be conducted by the industry experts like Data scientists, IIT professors and renowned HR's in order to mould you in every area possible

Hear it from our learners



"They are very approachable and friendly when we ask any doubt or any clarification. Before joining guvi I have already done a course of data science in another institution. When comparing these two institutions, there is a lot of difference in teaching. I love that the mentor who is teaching the course is not only a mentor but a professional too. This is a very unique thing about guvi. I will rate 5/5 to Guvi."

Vishally



"GUVI is one of the best platforms to start a new course and a new career. Advanced Programming and Master Data Science is one of the best programs which are been trained with industry experts. It has its own software to practise and a huge number of exercises to master any topic."

Tejas Samanthapudi



"Guvi helps me to improve my self-confidence in coding skills. The zoom classes are totally comfortable, friendly and easy to learn. It helps me to understand the basic and the core concepts and it helped me to build logical skills. I got great mentor's which helped me to bridge between the academics. I'm very proud 🙏 Thanks to Guvi."

Gokila



"I have attended several classes of Masters in Data science course conducted by Guvi. It is really helpful to gain knowledge as it is different from other online courses. Here, we have mentors in live sessions, so we will be more concentrated than other online courses where we watch pre recorded videos. Also we are getting weekly tasks that would make us learn even if there is no class. I am thankful for all the people in Guvi for building up such a valuable program for our career."

Gokul



"Guvi offers a cordial, supportive and friendly environment to learners. With excellent support and 24*7 assistance from the mentors guvi does not leave any stone unturned to improvise your learning. Thanks for being such an inspiration to us."

Gokak Mohd Ishtiaque



"I always liked coding but I didn't really get a good platform to learn things as per industrial requirements. When I was in search I got to know about Guvi, I really felt trustworthy by their response. When I joined the Data Science course the weekend live classes and recorded course videos has made learning easy to me. Eventually I started spending more time practicing in Codekata. I loved the way Guvi took care of clarifying doubts asap. Thank you!"

Sonia kola



"Hello folks, if you are thinking of a career transition in the 'Data Science' field then, 'GUVI' is the best platform to get nourished, indulged and protruded in this upcoming field and also, it doesn't matter from which engineering background you are or whether you are a working fellow. The best thing I found here is you will always get motivated unknowingly and become curious to learn more & more from the tutorial videos conducted by the IITM professors. GUVI helps me to think about the problem in multidimensional ways. Thanks to the GUVI team"

Shubham Nehete



"The datascience course is very good, the concepts are being explained in a crisp manner. The instructors have good depth in the subject and solve every doubt one might have. Thanks to GUVI for setting a great structured program."

Diliban Sibi



"The course videos help you to learn the tools by yourself and you can track the progress. The mentors are very patient and ensure that students understand the concept, sometimes going the extra mile and explaining. Sometimes the mentors try to teach in your native language, if needed. The practice platforms are easy to learn and practice. By completing this data science course, sure you can become a Data Scientist."

Sridharan K



"This course is designed being dynamic, interactive and range of materials to refer. This is very well structured in such a way that it makes the participants to perform, discuss, and to participate in assessments that will help the participants to maximize the utilization. This program is suitable for all students, freshers and working professionals. This course is excellent for those who would like to learn the basics of program like Python and would like to broaden their knowledge in Data Science. I enjoyed seeing videos in GUVI website from experts that also explains the concepts in a detailed manner."

Anbazhagan

Instructors

Learn from India's top Industry Leaders

Shabarinath Premal

Founder of ResPro Labs



Mr Koushik Krishnan

Data Science Analyst at
Credit Suisse



Mr Nethaji Nirmal

Co-Founder, Webdojo



Mr Revanth Guthala

Lead Data Analyst, Yulu



Mr Bala Chandar

Data Scientist,
US-based client



Our Placements



"I got a 57% Hike,
Thank you GUVI Team"

Sonia Kola ▶
Data Scientist



[Watch Video](#)



"Every topic was
covered from scratch"

Rakesh ▶
Python Developer



[Watch Video](#)



"GUVI helped me in
advancing my Career"

Divyansh Chaudhary ▶
Intern Data Analyst



[Watch Video](#)

Program Details

PROGRAM DURATION AND FORMAT

3-Month Weekday/5-Month Weekend

PROGRAM START DATES

Please contact our Data Science coordinator

Deepak: +91-9736097320

PROGRAM FEE

Total Course Fee	₹89,999
Pre-BootCamp Booking Fees	-₹8000
Remaining Fee	₹81,999

Now become a proficient Data Scientist/ Analytics at
Affordable Installments! Master Data Science

at just **₹ 7934*** /Month

AVAILABLE EMI OPTIONS



Upto 12 Months*

Note: Valid documents are required for EMI Process.
Additional processing fee will be applied. EMI Amount
might vary with Vendors

ELIGIBILITY

- ✔ **No – Eligibility / Restrictions!!!**
- ✔ Any interested individual who is aspiring to get a job in the IT industry as a **Data Scientist**
- ✔ Working Professionals who wish to **switch** their **career into Data Science.**

“Gain Proficiency in Data Science from GUVI & Become recruiters TOP PICK!”

Begin your Skill Development Journey Today!



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