

PYTHON FOR DATA ANALYTICS

(Project Based Program)



10

MODULES

30

HOURS

2

INDUSTRY
PROJECTS

15

INSTRUCTOR
LED SESSIONS



भारतीय सूचना प्रौद्योगिकी संस्थान भागलपुर
Indian Institute of Information Technology
Bhagalpur

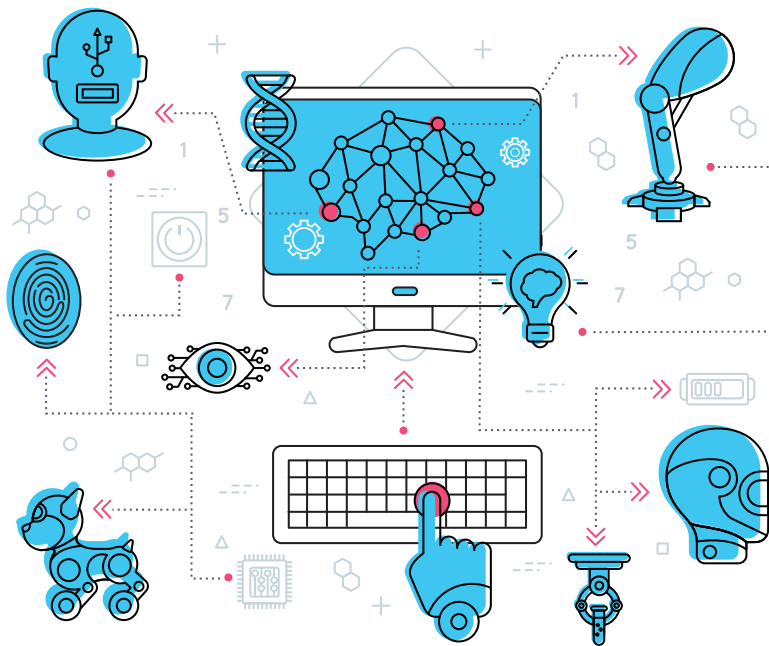
**IIIT-Bhagalpur offers Certified
Project Based Learning Program in
“Python for Data Analytics”**

in collaboration with



PROGRAM OVERVIEW

This Python Programming Course covers both concepts and project of Python like Data Structures & Types, writing python scripts, sequence and file operations, Graphs & Plots, Data Wrangling, Statistical Computation etc. This course will also offer practical exposure to some of the important and widely used Python Programs like Pandas, Numpy, Matplotlib, Anaconda, Scipy etc.



Python is a very powerful open-source language that has powerful libraries for data manipulation and analysis. For a longtime, Python has been used in scientific computing and highly quantitative domains such as Healthcare, Transportation, Retail & Finance. As of today, it is the most preferred language for Artificial Intelligence, Robotics and Web Development.

PROGRAM OUTCOME

On completion of the program, students will be able to do the following:

- Write python scripts, unit test code
- Learn techniques to work with different types of data sets
- Learn data visualization
- Practical exposure Using Jupyter notebooks, master the art of presenting step by step data analysis

PROGRAM HIGHLIGHTS

Vitti has established an AI & Innovation Hub in collaboration with IIIT-Bhagalpur experts to re-skill and re-tool working professionals towards Artificial Intelligence space, this program offers the following benefits:

- Experienced Faculty Led Sessions
- Live-Interactive Online Classes
- Program Content & Structure designed in collaboration with IIIT-Bhagalpur Faculty and Vitti Industry experts.



PROJECTS

Each student will get hands on practical experience in Python & Data Analytics.



VITTI ADVANTAGE

Vitti Interactive Digital Learning Platform ensures per excellence, quality education anytime in pervasive environment.



ACCESS TO LMS

You get access to Vitti Learning Management System (LMS) where presentations, quizzes, installation guide & class recordings are there.



24X7 EXPERT ONLINE

Support team to resolve all your technical queries

PROGRAM CONTENT

PYTHON PROGRAMMING

Duration: 30 Hrs.

• Introduction to Python Programming

- Installation of Python
- Interactive Shell
- User Interface or IDE, Pycharm, Eclipse, Visual Studio
- Program structure in Python
- Execution steps
- Executable or script files.

• Introduction to Packages

- Installation of packages
- Using Anaconda, Numpy Pandas
- Scipy, Matplotlib

• Data Structure and Types in different Packages

- Array
- Lists
- Tuples
- Strings
- Variables
- Arithmetic and Logical operations
- Date and Time

• Statements and controls in Python

- Assignments, Expressions and prints
- If tests and conditional logic
- While and For Loops
- Iterations and Comprehensions

• Processing Texts

- Texts and Strings
- Converting Strings to numbers
- Converting numbers to strings
- Concatenation of strings

• Graphs and Plots

- Matplotlib package
- Interactive graphs and Image files
- Plotting graphs
- Lines and Markers
- Plotting several graphs in one figure
- Colors
- Controlling the graph
- Histogram and different graphs

• File Operations

- Opening a file

- Closing a file
- Searching inside text file
- Working with csv files
- Working with Binary files

• Data Wrangling

- Filtering out missing data.
- Filling in missing data.
- Finding outliers.
- Re-shaping and Pivoting
- Removing duplicates.
- Replacing values.
- Web Scraping

• Statistical Computation

- Correlation & Co-variance.
- Polynomials & Liner regression.
- Statistical tests

• Database Connection

- Files versus Database
- Visual Studio and SQL
- SQL queries in Python projects
- Pycharm etc.

WHO SHOULD **ATTEND**

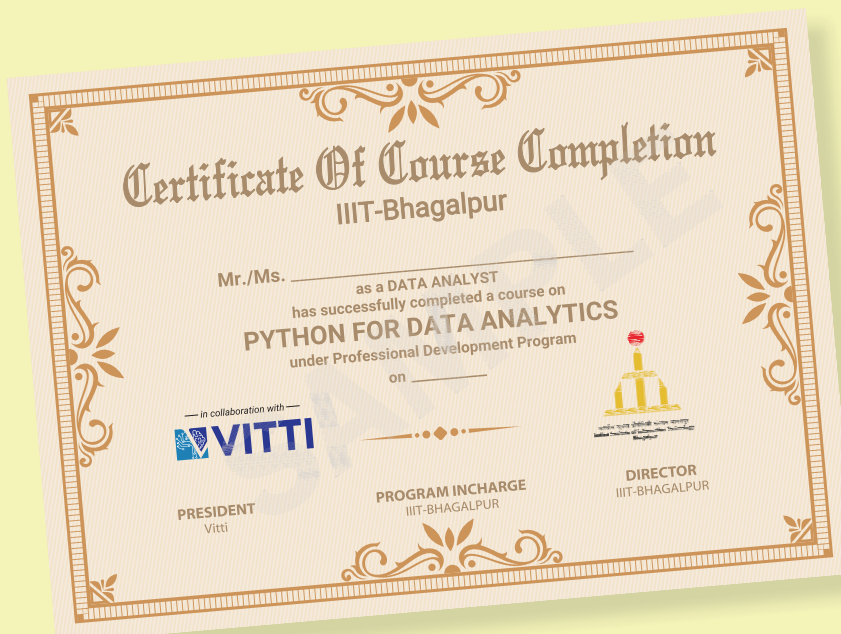
The Python Programming Course is a good fit for the below professionals:

- Students, Graduates, Freshers
- Developers, Programmers, Technical Leads, Architects
- Statisticians and Analysts
- Business Analysts & Business Intelligence Managers
- Project Managers who want practical exposure along with the course

PRE-REQUISITES

- Willingness to learn Advance Programming
- Basic understanding of programming will be beneficial

IIIT - BHAGALPUR CERTIFICATION “PYTHON FOR DATA ANALYTICS”



FACULTY PROFILE



DR. A. K. SINHA

He is one of the members of the Advisory Board of Universal Systems Technology, Inc, USA. Holds a PhD degree in Systems Modelling from IIT Delhi, M.Tech (Control System) from IIT Delhi and B.Sc. Engineering from Bihar University.

He has 35 years of teaching, research, and consultancy experience in the various fields of computer science along with AI & ML. Guided 7 Ph.D. and more than 30 M.Tech scholars.

He is a well-known name in the field of Artificial Intelligence space.



DR. DEEPTI YADAV

She is an enthusiastic Data Scientist with 16 years of experience in teaching, research & consultancy and holds Ph.D. in machine learning based data analysis from IIT (Roorkee). Currently, she resides in Silicon Valley, USA and provides consultancy services.



KUNAL GERA

Kunal is a educator, mentor author and consultant. Worked as a business and data Analyst with 10+ years of international and domestic experience. Worked for numerous industries in US, Canada, Africa, Australia and Gulf countries. Worked on project such as consumer analytics, credit card analytics, NLP implementation and computer vision.



DR. RUPAM BHATTACHARYYA

Rupam Bhattacharyya is Ph.D. in Computer Science & Engineering from Tezpur University. Recipient of Scholarship by University of Stirling, Scotland, UK, GATE Scholarship and got Williamson Magor Scholarship. Certified FPGDST from CDAC Bangalore. Presently Teaching at IIIT Bhagalpur.



DR. SANDEEP RAJ

Sandeep Raj (Member, IEEE), Ph.D in Electrical Engineering from IIT, Patna, Currently serving as an Assistant Professor with the Deptt. of Electronics and Communication Engineering, IIIT- Bhagalpur. He served as a Visiting Faculty with the National Institute of Technology Patna. His current research interests include biomedical signal & image processing, embedded systems, machine learning, and Internet-of-Things.



DR. DILIP KUMAR CHOUBEY

He is Ph.D. in Engineering from Birla Institute of Technology, Ranchi and has more than 9 years teaching & research experiences. He is an Assistant Professor in the Deptt. of Computer Science & Engineering, IIIT- Bhagalpur. He is a author of 2 book and has more than 44 reputed research publications in international journals, book chapters and conference proceedings. He has also one project as a Co-PI funded by TEQUIP Collaborative Research Scheme.

INDUSTRY EXPERTS



KUNDANA LAL

As part of the founding team of Vitti, Kundana Lal is the President @ Vitti. Kundana brings over 25 years of industry experience in various IT-related senior leadership role, building businesses, handling corporate and marketing strategies, solidifying profitable relationships with Fortune 500 companies. He was Vice President with Capgemini heading Cloud & AD deliveries for Continental Europe. He has done his Masters in EEE from BIT, Ranchi with specialization in Artificial Intelligence.



SHWETANK SHARAD

He is a Managing Partner on the Executive Board of Vitti. He is a Senior Executive with over 25 years of experience in IT, ITES/ Business Process Services covering Business Transformation, Robotic Process Automation (RPA), Artificial Intelligence and Service Excellence. He is a GE certified Six Sigma Master Black Belt, Certified Robotic Process Automation and Artificial Intelligence-Machine Learning (AI-ML) professional.



SHASHIKANT CHOUDHARY

He completed his MBA in Marketing & IT in 2001 from Symbiosis Institute of Management Studies, Pune. He has more than 19 years of enriched and diverse experience in IT Sales and Business Development in Companies such as, Oracle India, Wipro Technology, and BMC Software etc. He has rich experience of engaging at leadership levels in Govt. and PSUs.



DR. DILIP NANDKEOLYAR

An alumnus of Asian Institute of Management Manila Philippines, DR. DILIP NANDKEOLYAR is a Management post graduate, specialized in Marketing and Strategic Planning & is a B.Sc. (Hons) in Chemistry. He has a Doctoral degree from Thapar University, Patiala.

The guiding philosophy behind all the endeavours of Dr. Nandkeolyar has always been to succeed because his Employers, Peers, Subordinates, Customers, Clients, Students/ Trainees or anyone choosing to associate with him must – by delivering value plus.



SOUMITRA PODDAR

He is one of the distinguished alumni of Vinod Gupta School of Management, IIT Kharagpur. He graduated from the institute in the year 1995 after achieving his specialization in Finance and Information Systems. Before coming to VGSoM, he worked with Mastek Limited as a consultant and gained a good technical exposure of the industry. Later in 2002, he joined IBM and with his managerial acumen, today he has reached the level of Delivery Project Executive.



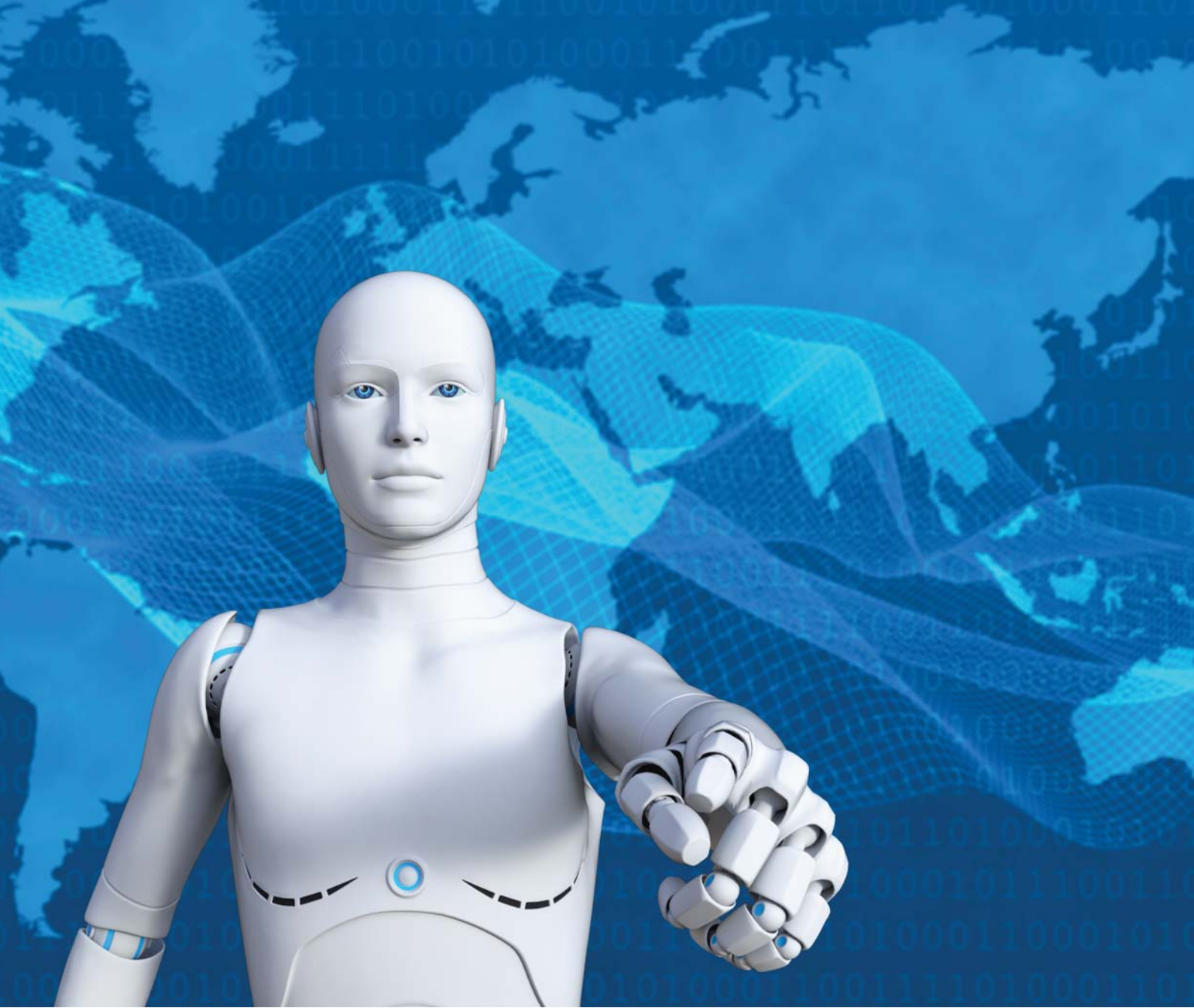
VANESSA KLOTZMAN

A USA based Software Engineer Gained experience with performance analysis and optimization from a database perspective. She has worked closely with the SIMBA administration team in the Walt Disney Company to develop a self-service portal for all SIMBA users. This portal assist the SIMBA users in submitting requests to the administration team and aid in the automation of manually intensive tasks.



YOGESH PARGAIEN

Experienced and driven data scientist with rich experience in the industry. Conducted individual training sessions for employees in Microsoft Azure, Big Data Tools & Technology, Machine Learning and Amazon Web Services. Trained 30+ groups in Big Data technology stack along with machine learning and projects.



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