DEEP LEARNING WITH PYTHON
(Project Based Program)

AI
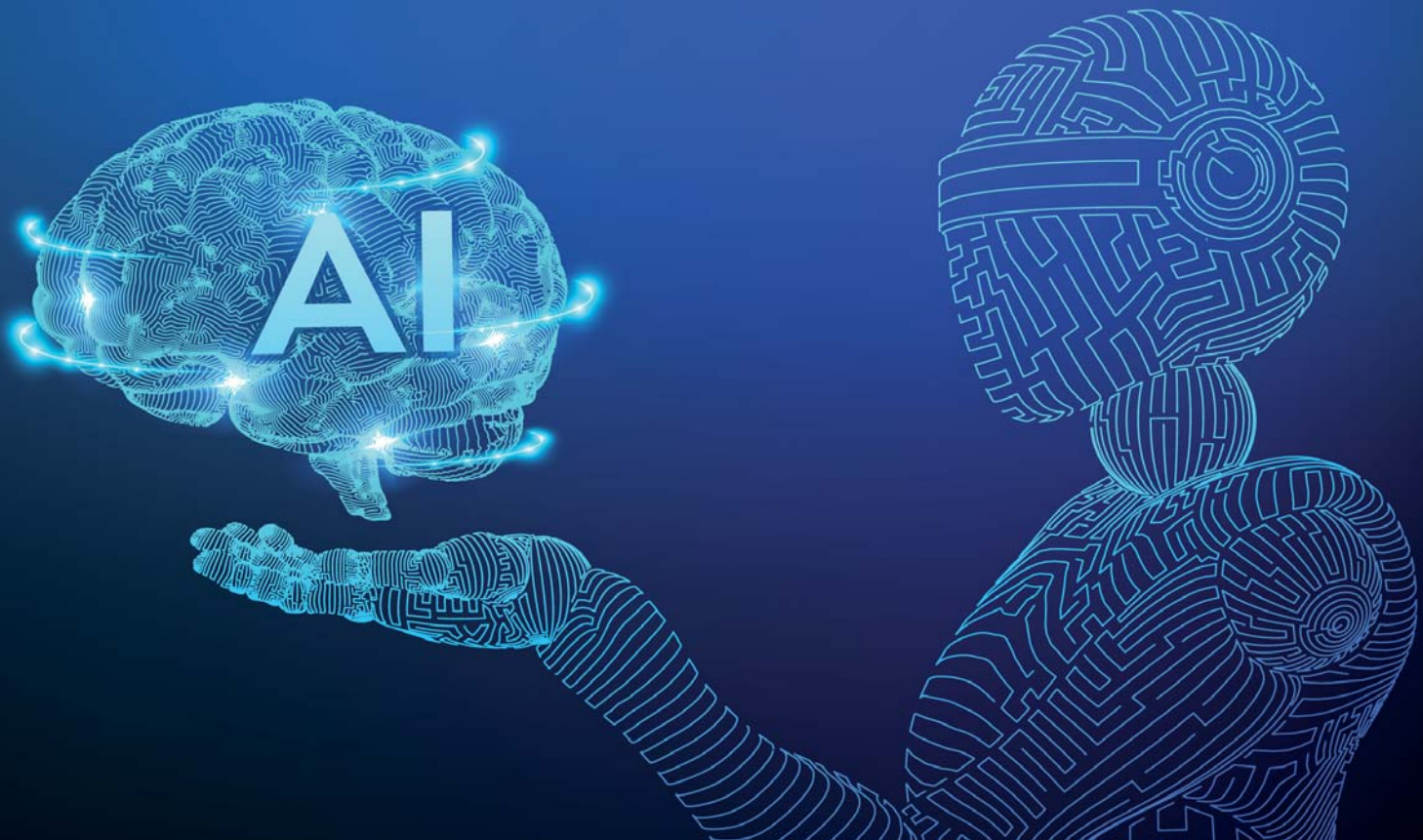
7	40	2	20
MODULES	HOURS	INDUSTRY PROJECTS	INTRACTIVE SESSIONS

Fast-Forword your Career with market-relevant "IIIT-Bhagalpur Certified Deep Learning with Python Program" from the best in the Industry

भारतीय सूचना प्रौद्योगिकी संस्थान भागलपुर
Indian Institute of Information Technology Bhagalpur

in collaboration with

VITTI

PROGRAM **OVERVIEW**

Indian Institute of Information Technology- Bhagalpur in collaboration with Vitti offers certified Project Based Learning Program in "Advanced Python API for Deep Learning" with deep-dive in "Neural Networks"

This program is focused on building industry-ready professionals who can work on Deep Learning Platforms leveraging machine learning, data mining, and statistical modelling for predictive and prespective enterprise analytics. This program will enable you to develop understanding and practical experience with neural network models, deep learning & data analytics using Tensor-flow and Python.

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 Deep Learning

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

ACCESS TO LMS
You get access to 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**

DEEP LEARNING with PYTHON   **Duration:** 40 Hrs.

1. Introduction to deep learning

- Fundamental concepts
- Feature learning
- Deep Learning algorithms
- Object Recognition and Classification
- Open source package for deep learning
- Tensor Flow, Keras, H2O, pytorch, pandas

2. Unsupervised Feature Learning

- Autoencoders
- Network Design
- Restricted Boltzmann machines
- Hopfield network and Boltzmann machines
- Implementation in TensorFlow
- Deep belief networks

3. Convolutional Neural Network

- Architecture on CNN
- Types of layers in CNN
- Building an image classifier using CNN
- Deep Learning with CNN

4. Recurrent Neural Networks

- Recurrent Neural Networks
- Language Modeling
- Word-based models
- N-grams
- Character-based Model
- LSTM network
- Speech Recognition
- Speech as input data
- Acoustic model
- Image Recognition

5. Deep Learning for Board Games

- Early game playing AI
- Using min-max algorithm to value game states
- Implementing tic-tac-toe games
- Deep learning in Monte Carlo Tree Search

6. Deep Learning for Computer Games

- A supervised learning approach to computer games
- Applying genetic algorithm to playing games
- Q-learning
- Dynamic Games

7. Anomaly Detection

- What is anomaly and outlier detection
- Real-world application of anomaly detection
- Anomaly detection using deep encoders
- MNIST digit anomaly recognition using H2O library
- Electrocardiogram pulse detection

PROGRAM **OUTCOME**

On completion of the program, students will have developed a world-class skill set in their selected technology domain that provides "Employability Enhancing" skills and practical exposure thereby substantially increasing their earning potential and compensation benchmarks.

Deep Learning in TensorFlow with Python is designed by industry experts to make you a Certified Deep Learning Engineer with an advantage of project based learning. This course offers:

- Deep-dive into Deep Neural Networks

- Comprehensive knowledge of various Neural Network architectures such as Convolutional Neural Network, Recurrent Neural Network.

- The exposure to real-life industry-based projects which will be executed using Tensor Flow library

- In-depth involvement of an Industry Expert throughout the Deep Learning Projects exposing to industry standards and best practices.

CANDIDATES CAN EXPECT TO BE HIRED IN POSITIONS SUCH AS:

- **Deep Learning Engineer**
- **Machine Learning Scientist**
- **Deep Learning Specialist**
- **Solution Architect (Artificial Intelligence)**

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 enthusiatic 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. Presentaly 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.

WHO SHOULD **ATTEND**

The Tensor Flow with Python Training is for all students & professionals who are passionate about Deep Learning and want to go ahead and make their career as a Deep Learning Engineer. It is best suited for individuals who are:

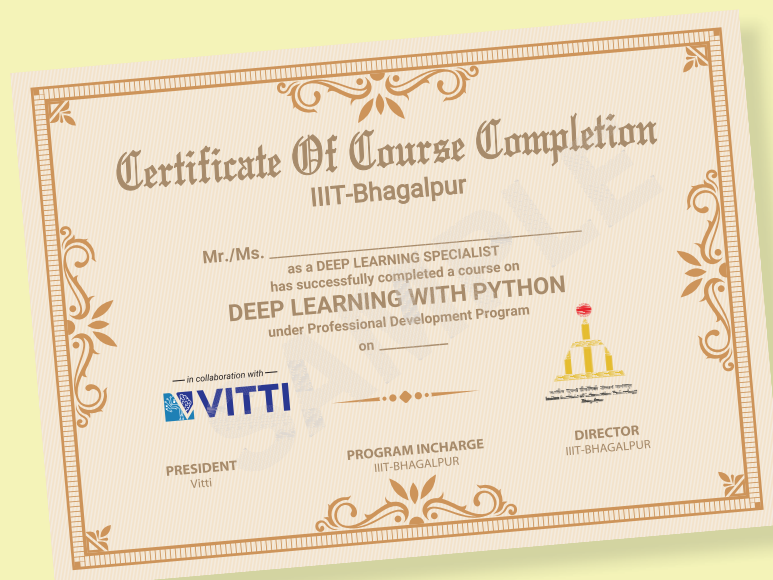Developers aspiring to be a 'Data Scientist' or "Machine Learning Specialist"

- Analytics Managers who are leading a team of AI Business analysts
- Business Analysts who want to understand Deep Learning (ML) Techniques
- Information Architects who want to gain expertise in Predictive Analytics
- Analysts wanting to learn Deep Learning platforms
- Professionals/students who are looking for industrial projects along with a program.

However, this course is not just focused on one industry on skill set, it can be used by anyone to enhance ther ortfolio in AI/ML/DL space and gain practival exposure in projects.

PRE-REQUISITES

- **Basic programming knowledge in Python**
- **Concepts about Machine Learning**

IIIT - BHAGALPUR CERTIFICATION "DEEP LEARNING WITH PYTHON"

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