

# **Shri Govindram Seksaria Institute of Technology and Science**



## **Internship Report and Online Course Details**

**Submitted By : Shikhar Mahajan**  
**Enrollment Number : 0801CS171077**

## INTERNSHIP REPORT

**Internship Number : 01**

**Company Details:**

**Name :** *Persistent Systems Limited*

**Address :** Persistent Systems Limited, Bhageerath, 402, Senapati Bapat Road,  
Pune 411016

**Mode :** Virtual Internship

**Job Profile :** Intern

**Domain :** Machine learning, Artificial Intelligence, Backend API Development

**Duration :** 2 Months (4 May 2020 - 3 July 2020)

**Assigned Work :**

1. To make an api in flask which will take excel file as an input and return a JSON output which will tell whether data in certain fields is valid and are in required format or not.
2. To learn about python, machine learning and neural networks from provided resources.
3. To make a mini project and give a demonstration on it which have implementation of neural networks in it.

## Internship Certificate

PSL/ HR Letter / 2020  
06-July-2020



### To Whomsoever It May Concern

This is to certify that Mr. Shikhar Mahajan (Employee Code:29889) has worked with our company from 04 May 2020 to 03 Jul 2020.

His designation at the time of leaving was Intern.

For Persistent Systems Limited,

A handwritten signature in blue ink, appearing to read 'Manisha', with a small circular stamp or mark below it.

Manisha Tapaswi  
General Manager - Human Resources

**Internship Number : 02**

**Details :**

**Name : ISMIRITI & IIT KANPUR**

**Address :** Indian Institute of technology kanpur ( IITK ), Uttar Pradesh

**Mode :** Physical

**Job Profile :** Trainee - Intern

**Duration :** 6 weeks (3 June 2019 - 12 July 2019)

**Programme Name :** Introduction of AI and IOT

**Assigned Work (Projects):**

1. Automobile Robot:

Successfully made a real time automobile robot which will automatically move and take turns according to the obstacles in its path. Used various sensors like IR, ultrasonic sensors and implemented machine learning algorithms.

2. Facial Emotion Recognition and analysis (FERA) :

Applied Convolution neural network (CNN) to implement a model which classifies a human face in an image to one of the 7 emotions categories like anger, sad, happy, disgust etc. Performed image augmentation, extracted face from image using haar cascade and worked upon model hyperparameters to improve it's accuracy.

## Internship Certificate



**INTERNSHIP CERTIFICATE**  
JUNE 03 – JULY 12, 2019

This is to certify that Mr./Ms./Dr./Mrs. Shikhar Mahajan  
from Shri G.S. Institute of Technology and Science, Indore (M.P.)  
has successfully completed the 40 days Internship Program in "Introduction of AI & IoT"  
organized by IIT Kanpur in collaboration with iSMRTI.  
His/Her Performance in the Internship was excellent.

  
**Prof. Laxmidhar Behera**  
COURSE COORDINATOR

  
**Dr. Himanshu Singh**  
ISMRTI, CEO

Performance : Excellent

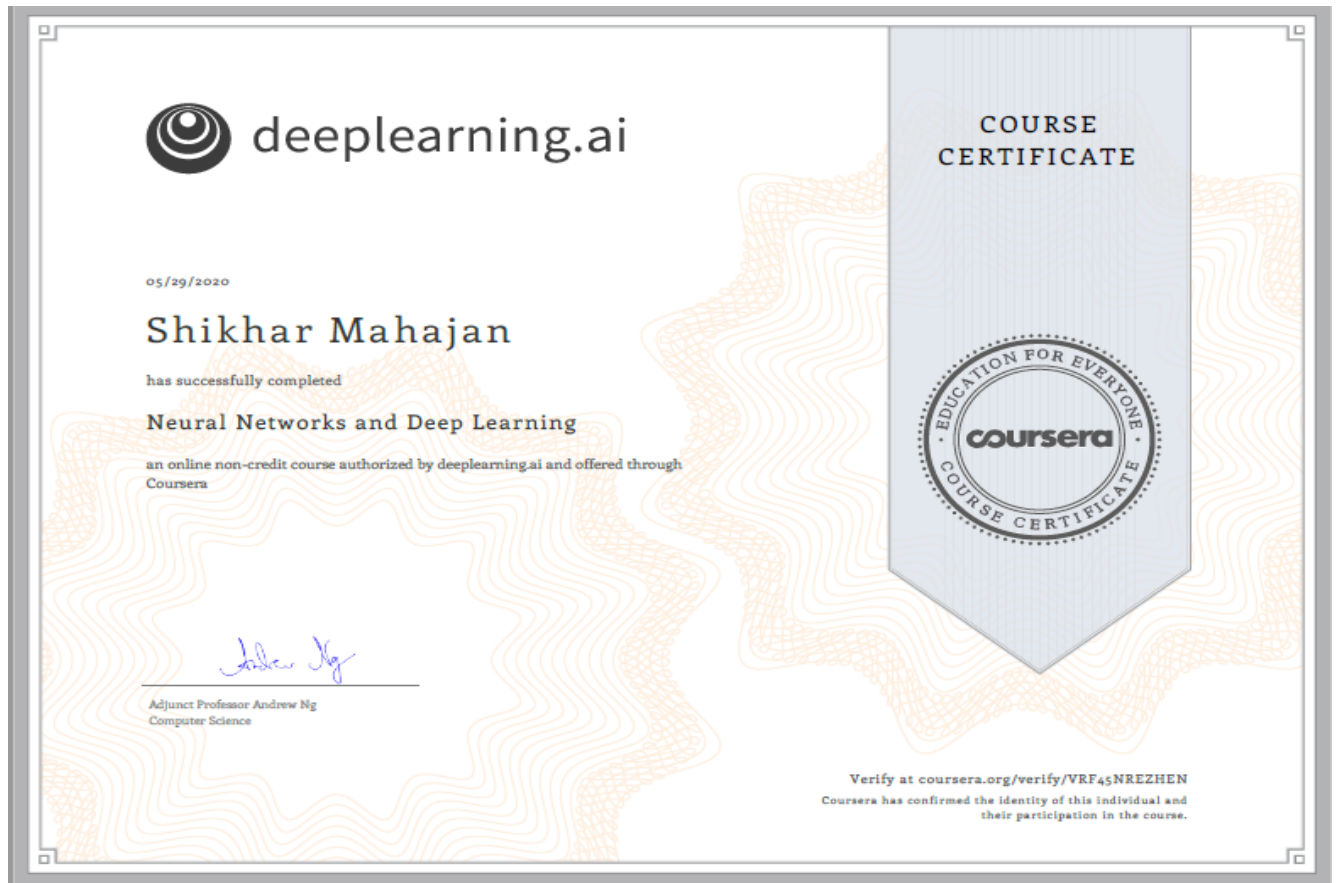
## COURSE DETAILS

### 1. COURSERA

#### Neural Networks and Deep Learning

Deep Learning Specialization by deeplearning.ai

Grade Achieved = 95.10%



#### Course Outcomes:

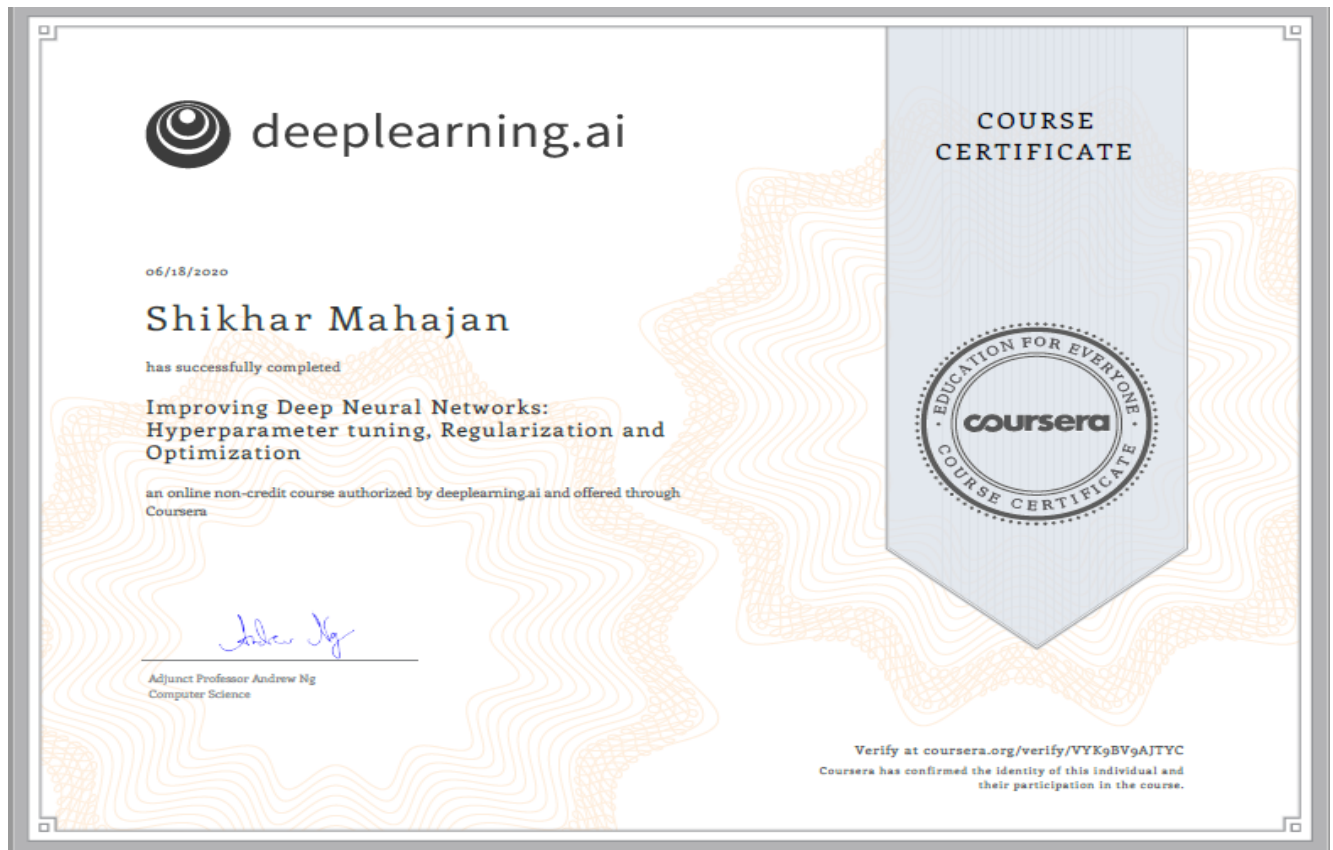
In this course of the Deep Learning Specialization, I studied the foundational concept of neural networks and deep learning.

By the end of this course, I was familiar with the significant technological trends driving the rise of deep learning; build, train, and apply fully connected deep neural networks; implement efficient (vectorized) neural networks; identify key parameters in a neural network's architecture; and apply deep learning to your own applications.

The Deep Learning Specialization is the foundational program that helped me understand the capabilities, challenges, and consequences of deep learning and prepare you to participate in the development of leading-edge AI technology. It provides a pathway to gain the knowledge and skills to apply machine learning to your work, level up your technical career, and take the definitive step in the world of AI.

## Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization

Deep Learning Specialization by deeplearning.ai  
Grades Achieved = 94.50%.



### Course Outcomes:

This is the second course of the Deep Learning Specialization, in which I opened the deep learning black box to understand the processes that drive performance and generate good results systematically.

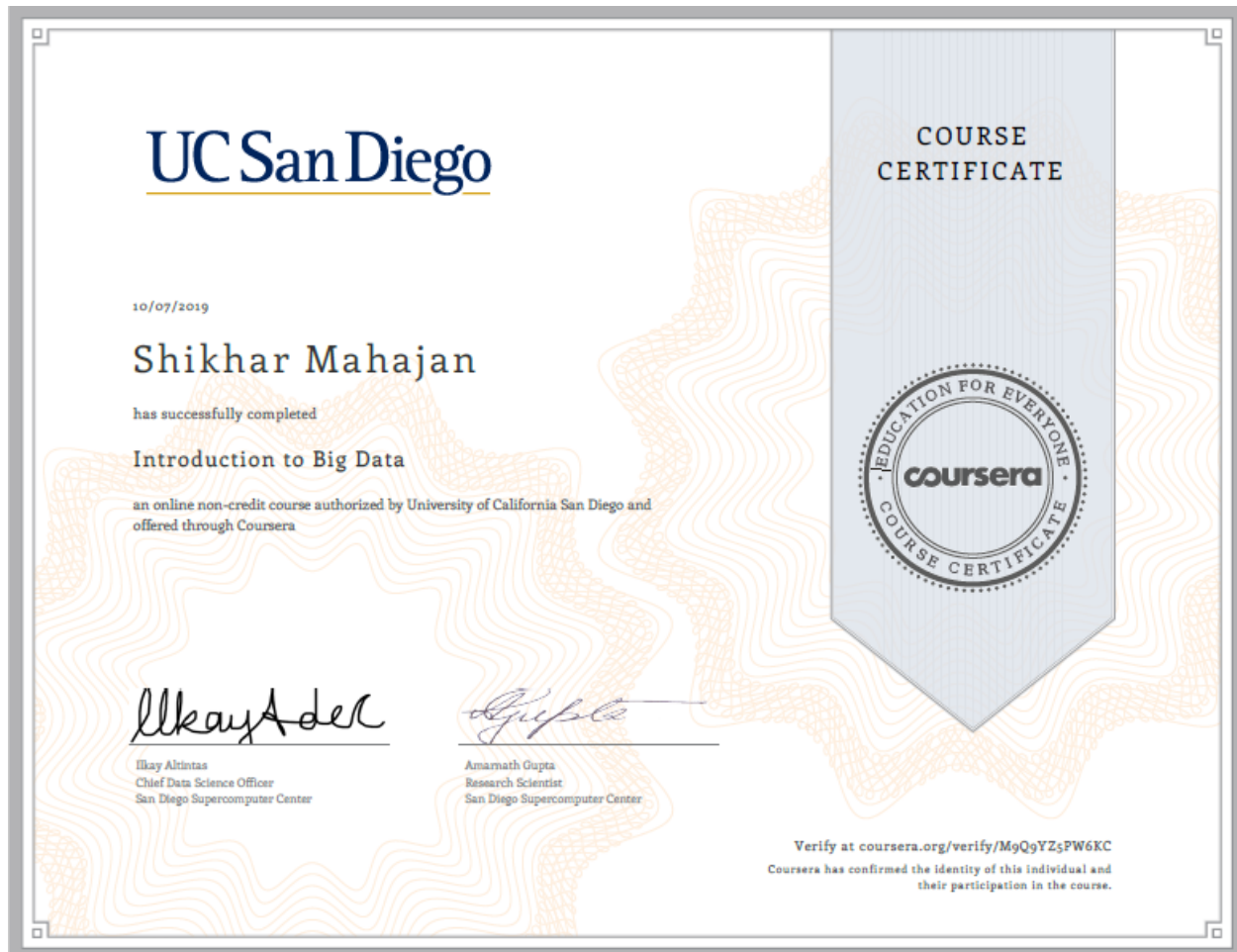
By the end, I learned the best practices to train and develop test sets and analyze bias/variance for building deep learning applications; be able to use standard neural network techniques such as initialization, L2 and dropout regularization, hyperparameter tuning, batch normalization, and gradient checking; implement and apply a variety of optimization algorithms, such as mini-batch gradient descent, Momentum, RMSprop and Adam, and check for their convergence; and implement a neural network in TensorFlow.



## Introduction to Big Data

University - UC San Diego Coursera

Grades Achieved = 94.90%



### Course Outcomes-

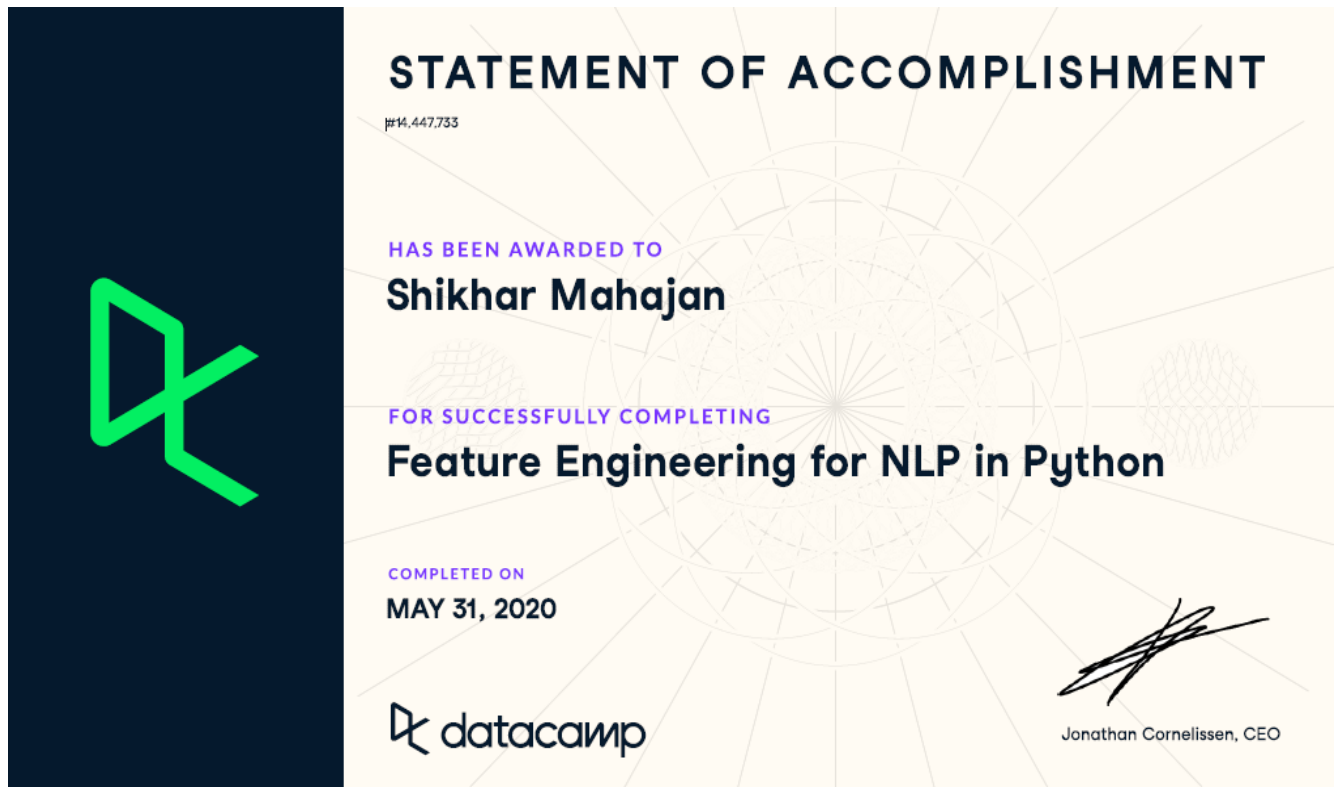
- Describe the Big Data landscape including examples of real world big data problems including the three key sources of Big Data: people, organizations, and sensors. Explain the V's of Big Data and why each impacts data collection, monitoring, storage, analysis.
- Identify what are and what are not big data problems and be able to recast big data problems as data science questions. Provide an explanation of the architectural components and programming models used for scalable big data analysis.
- Summarize the features and value of core Hadoop stack components including the YARN resource and job management system, the HDFS file system and the MapReduce programming model. Install and run a program using Hadoop

## 2. DataCamp

### Feature Engineering for NLP in Python

DataCamp

Grades Achieved = 100%



#### Course Outcomes:

In this course, I learned techniques that allowed me to extract useful information from text and process them into a format suitable for applying ML models. More specifically, I learned about POS tagging, named entity recognition, readability scores, the n-gram and tf-idf models, and how to implement them using scikit-learn and spaCy. Also to compute how similar two documents are to each other. In the process, predicted the sentiment of movie reviews and build movie and Ted Talk recommenders.

## Introduction to Python

**DataCamp**

**Grades Achieved = 100%**



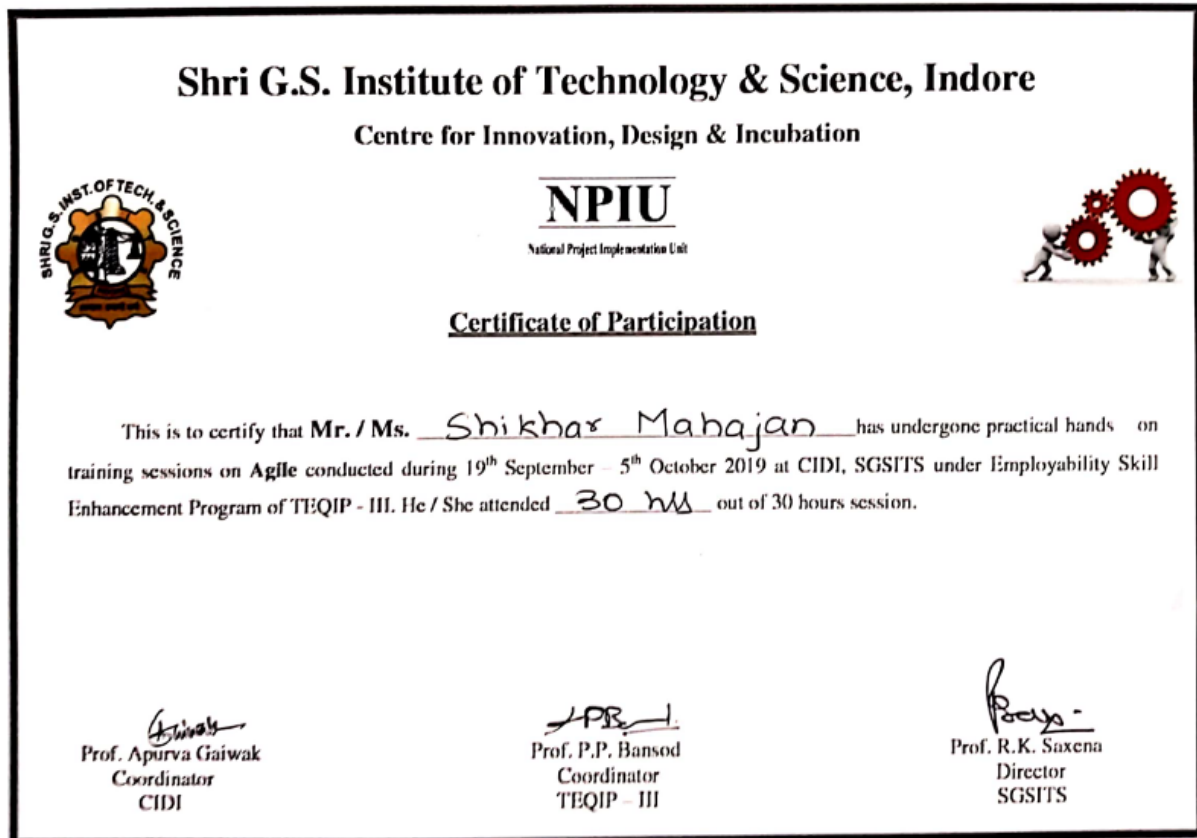
### Course Outcomes:

Python is a general-purpose programming language that is becoming ever more popular for data science. In this course, I focus on Python specifically for data science. In this Introduction to Python course, I learned about powerful ways to store and manipulate data, and helpful data science tools to begin conducting your own analyses.

### 3. Agile (CSE department - SGSITS)

TEQIP SGSITS

Grades Achieved : 83%



#### Course Outcomes:

- Explain the Agile project management approach and philosophy, including values and principles. Explain the pillars of Scrum and how they support Scrum values.
- Identify and compare the essential roles in a Scrum team and what makes them effective. Build and manage a Product Backlog and perform Backlog Refinement.
- Implement Agile's value-driven delivery strategies and define a value roadmap. Develop a project using agile methodologies and framework.