NUS National University of Singapore | Advanced Computing for Executives
School of Computing

23rd January 2023

HITESH GOYAL
VELLORE INSTITUTE OF TECHNOLOGY
CHENNAI

Subject: Letter of Evaluation

Dear HITESH GOYAL,

This is with reference to the Global Academic Internship Programme (GAIP) conducted by Corporate Gurukul from 12th Dec 2022 to 29th Dec 2022 on 'Data Analytics using Deep Learning'. The course work for internship included the following:

Introduction to Data Analytics
- What is Data Analytics?
- Types of Data Analytics
- Data in Data Analytics
- Decision Models
- Data Mining Process
- Overview of Predictive Analytics

Exploratory Data Analysis
- Data Visualization
- Data Querying
- Statistical Methods for Summarizing Data
- Exploring Data Using Pivot Tables

Descriptive Statistical Measures
- What is Descriptive Analytics?
- Populations and Samples
- Measures of Location
- Measures of Dispersion
- Measures of Shape
- Measures of Association

Introduction to Python Data Science Libraries
- Numpy
- Scipy
- Matplotlib
- Sci-kit Learn

Introduction to Regression Analysis
- Simple Linear Regression
- Multi Linear Regression
- Stepwise Regression
- Coding Scheme for Categorical Variables
- Problems with Linear Regression

Introduction to Classification

- Decision Trees
- Bayesian Classifier
- Logistic Regression
- Multinomial Logistic Regression

- Support Vector Machine
    - Separating Hyperplane
    - Maximal Margin Classifier
    - Support Vector Classifier

Introduction to Clustering

- Affinity Measures and Partition Methods
- K-means
- K-medoids
- Hierarchical Methods

Introduction to Text Mining

- Text Mining Terminologies
- Text Mining Concepts
- Text Mining Process
    - Creating the Corpus
    - Creating the Term-Document Matrix
- Extracting the Knowledge
- Knowledge Extraction Methods for Text Mining
    - Classification
    - Clustering
    - Association

Introduction to Association

- Structure and Representation of Association Rules
- Strong Association Rules and the Concept of Frequent Itemsets
- Apriori Algorithm
- FP Growth
- Time Series Analysis

Overview of ANN

- Break-through Applications with ANN
- Why ANN?
    - Problems of Logistic Regression
- Back-propagation
- Gradient Descent Algorithm (GD)

Difficulties of training ANN

- Poor Gradient
- Overfitting and Underfitting

Advanced GD algorithm
- Stochastic GD (SGD)
- Mini-batch SGD
- Momentum SGD
- RMSprop and Adam

Other Training Techniques of ANN
- Random Initialization
- ReLU
- Dropout
- Data Augmentation

Convolutional Neural Networks (CNN)
- Convolution, Pooling Operations
- Popular CNN Architectures
- Applications of CNN in Python

Recurrent Neural Networks (RNN)
- Vanilla RNN
- LSTM and GRU
- Applications of RNN in Python

Your performance in GAIP was evaluated based on theoretical understanding and application of concepts in practical data analysis with GRADE A+.

We encourage you to further your knowledge, skills and research in the above areas and wish you the very best for a career ahead!

Sincerely,

	Samantha Sow	
Dr Lily Liu	Prof Samantha Sow	Dr Amirhassan Monajemi
Lecturer	Senior Lecturer	Senior Lecturer
Advanced Computing for Executives School of Computing National University of Singapore	Advanced Computing for Executives School of Computing National University of Singapore	Advanced Computing for Executives School of Computing National University of Singapore

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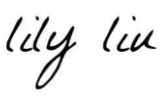
TRANSCRIPT

GLOBAL ACADEMIC INTERNSHIP PROGRAMME
DECEMBER 2022
DATA ANALYTICS USING DEEP LEARNING

Name: HITESH GOYAL | Date: 23rd January 2023

Assessment Component	Score	Topic/Parameter
In-Class Assessment	32/40	Introduction to Data Analytics and Descriptive Statistical Measures
	20/40	Introduction to Python Data Science Libraries, Regression Analysis & Classification
	36/40	Artificial Neural Networks
	32/40	Convolutional Neural Networks and Recurrent Neural Networks
Final Comprehensive Assessment	72/80	Comprehensive Assessment for the Course
Project Assessment	44/50	Final Project Work

	Assessment			Overall Percentage (Out of 100%)
	In-Class Assessment	Final Comprehensive Assessment	Project Assessment	86
	20% weightage	30% weightage	50% weightage	Grade
Percentage	15/20	27/30	44/50	A+
Faculty Assessor Signature				
Faculty Assessor Name	Dr Lily Liu	Prof Samantha Sow		Dr Amirhassan Monajemi

Grading Guideline:

O	100 - 90	B	54.9 - 50
A+	89.9 - 80	B-	49.9 - 45
A	79.9 - 70	C	44.9 - 40
A-	69.9 - 60	F	<40