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

20th July 2023

ARYAMAN SINGH DEV
MIT MANIPAL
MANIPAL

Dear ARYAMAN SINGH DEV,

Subject: Letter of Evaluation

This is with reference to the Global Academic Internship Programme (GAIP) conducted by Corporate Gurukul from 3rd June 2023 to 24th June 2023 on 'Data Analytics using Deep Learning'. The course work for internship included the following:

Introduction to Data Analytics

- Introduction to Data Analytics
- What is Data Analytics
- Types of Data Analytics
- Data in Data Analytics + Decision Models – Data Mining Process
- 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 Regression Analysis

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

Introduction to Classification

- Classification
- Decision Trees
- Bayesian Classifier
- Logistic Regression
- Support Vector Machine
- Separating Hyperplane
- Maximal Margin Classifier
- Support Vector Classifier
- Resampling Methods

Introduction to Clustering

- Affinity Measures and Partition Methods
- K-means
- K-medoids
- Hierarchical Methods
- Introduction to Association
- Structure and Representation of Association Rules
- Strong Association Rules and the Concept of Frequent Item sets – Apriori Algorithm
- FP Growth
- Time Series Analysis

Introduction to Text Mining

- Text Mining Terminologies
- Text Mining Concepts
- Text Mining Process
- Knowledge Extraction Methods for Text Mining
- Classification
- Clustering
- Association

Artificial Neural Networks (ANN)

- Overview of ANN
- Why ANN?
- Back-propagation

Artificial Neural Networks (ANN)

- Gradient descent algorithm (GD)
- Difficulties of training ANN
- Advanced GD algorithm
- Other training techniques of ANN

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

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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,

Dr Tan Wee Kek
Associate
Professor
DISA, School of Computing
National University of Singapore

Dr Amirhassan Monajemi
Senior Lecturer
DISA, School of Computing
National University of Singapore

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# TRANSCRIPT

| GLOBAL ACADEMIC INTERNSHIP PROGRAMME JUNE 2023<br>DATA ANALYTICS USING DEEP LEARNING | |
|---|---|
| Name: ARYAMAN SINGH DEV | Date: 20th July 2023 |

| Assessment Component | Score | Topic/Parameter |
|---|---|---|
| In-Class Assessment | 20/40 | Introduction to Data Analytics and Descriptive Statistical Measures |
| | 20/40 | Introduction to Python Data Science Libraries, Regression Analysis & Classification |
| | 20/40 | Artificial Neural Networks |
| | 24/40 | Convolutional Neural Networks and Recurrent Neural Networks |
| Final Comprehensive Assessment | 52/80 | Comprehensive Assessment for the Course |
| Project Assessment | 43/50 | Final Project Work |

| | Assessment | | | Overall Percentage (Out of 100%) 73% |
|---|---|---|---|---|
| | In-Class Assessment | Final Comprehensive Assessment | Project Assessment | |
| | 30% weightage | 20% weightage | 50% weightage | Grade |
| Percentage | 10.5/30 | 19.5/20 | 43/50 | A |
| Faculty Assessor Signature |  |  | | |
| Faculty Assessor Name | Dr Tan Wee Kek | Dr Amirhassan Monajemi | | |

Grading Guideline:

| | | | |
|---|---|---|---|
| O | 100 - 90 | B | 59.9 - 55 |
| A+ | 89.9 - 80 | B- | 54.9 - 50 |
| A | 79.9 - 70 | C | 49.9 - 45 |
| A- | 69.9 - 65 | D | 44.9 - 40 |
| B+ | 64.9-60 | F | <40 |

Biocube
Redefining Identity

**Date: 4th August 2023**

# INTERNSHIP PROGRAM CERTIFICATE

This is to certify that **Mr. Aryaman Dev S/O Mr. Inderpal Singh Dev,** student of **B.Tech** (Branch- MTE) **MIT, Manipal** has completed his summer internship in the field of **Development & Technology** for **5 weeks** at **Biocube Matrics Pvt. Ltd.** under the guidance of **Mr. Bharat Pruthi (AVP-AI & Analytics).**

During his internship he has demonstrated full dedication and self-motivation to learn cutting edge technologies like machine learning, computer vision, etc. His performance exceeded our expectations, and he was able to complete the project on time.

We wish him all the best for his upcoming career.

Sincerely,


For **Biocube Matrics Private Ltd**

'For Biocube Matrics Private Limited

Saroj Kumar Maurya

**Saroj Kumar Maurya**
Director/Authorized Signatory
(Director & HR Head)

SymphonyAI

Date: 30-Jun-2024

# INTERNSHIP COMPLETION CERTIFICATE

Dear Sir/Madam,

This is to certify that **Aryaman Singh Dev**, a student of **B. Tech** (Branch – MTE) **MIT, Manipal** has completed his internship in the field of **Data Science and Analytics** from 15-Jan-2024 till 30-Jun-2024 at **SymphonyIncubator Business Services Private Limited** under the guidance of **Mr. Sudhanshu Kashyap (Director-AI)**.

During his internship he demonstrated full dedication and self-motivation to learn cutting edge technologies like “Data Cleaning, Exploratory Data Analysis, Visualization, Anomaly Detection ML Model Building, and IRIS Tenant Setup” to name a few. His performance exceeded our expectations, and he was able to offer valuable solutions.

We wish him all the best for his future endeavors.

For **SymphonyIncubator Business Services Private Limited**

DocuSigned by:
Poornima Narayanappa
EC6DBE062C254C3...

**Poornima Narayanappa**
**Senior Manager – Human Resources**

Suvidha Mahila Mandal, Walni
Registration No. MH/568/1995
F No.12669
Registerd Under the Society Act of 1860

Registered under MCA, Govt. of India
CIN: U85300MH2019NPL323009

Office: 23/2, B-Wing, Mhada, Aurangabad, Maharashtra - 431001
Email: info@suvidhafoundationedutech.org | Website: www.suvidhafoundationedutech.org

Date: [12/07/2023 – 07/07/2024]

To,
**Aryaman Singh Dev**

## INTERNSHIP CERTIFICATE

This is to certify that **Aryaman Singh Dev** has successfully completed their internship at Suvidha Foundation from December 7th 2023 to July 7th 2024 under the supervision of the Foundation's technical mentorship team. During the internship, the candidate was engaged in AI-driven projects focused on enhancing the operational efficiency of NGOs and contributing toward social impact. Their key contributions

- Designed and implemented machine learning models to automate the classification and prioritization of aid requests received by NGOs based on urgency and resource availability.
- Built a lightweight recommendation engine to match donors and volunteers with relevant on-ground initiatives using AI-based profiling and engagement history.
- Developed a chatbot prototype that leverages NLP to guide users in accessing local welfare resources and schemes via NGO networks.
- Collaborated with the Suvidha Foundation team to integrate AI tools with existing NGO databases, improving data handling, beneficiary tracking, and reporting accuracy.
- Ensured the solutions were lightweight, privacy-aware, and scalable so they could be used by grassroots organizations with limited digital infrastructure.
- Demonstrated a strong understanding of the intersection of AI and social good and contributed ideas that reflected both empathy and technical depth.

We acknowledge the intern's dedication to using AI for public good and appreciate their contributions to our mission of sustainable development and community welfare.

We wish them all the best in their future endeavors.

Shobha Motghare

Mrs. Shobha Motghare
Secretary, Suvidha Mahila Mandal