CENTRAL INSTITUTE OF MANAGEMENT NEPAL

POST GRADUATE PROGRAM IN

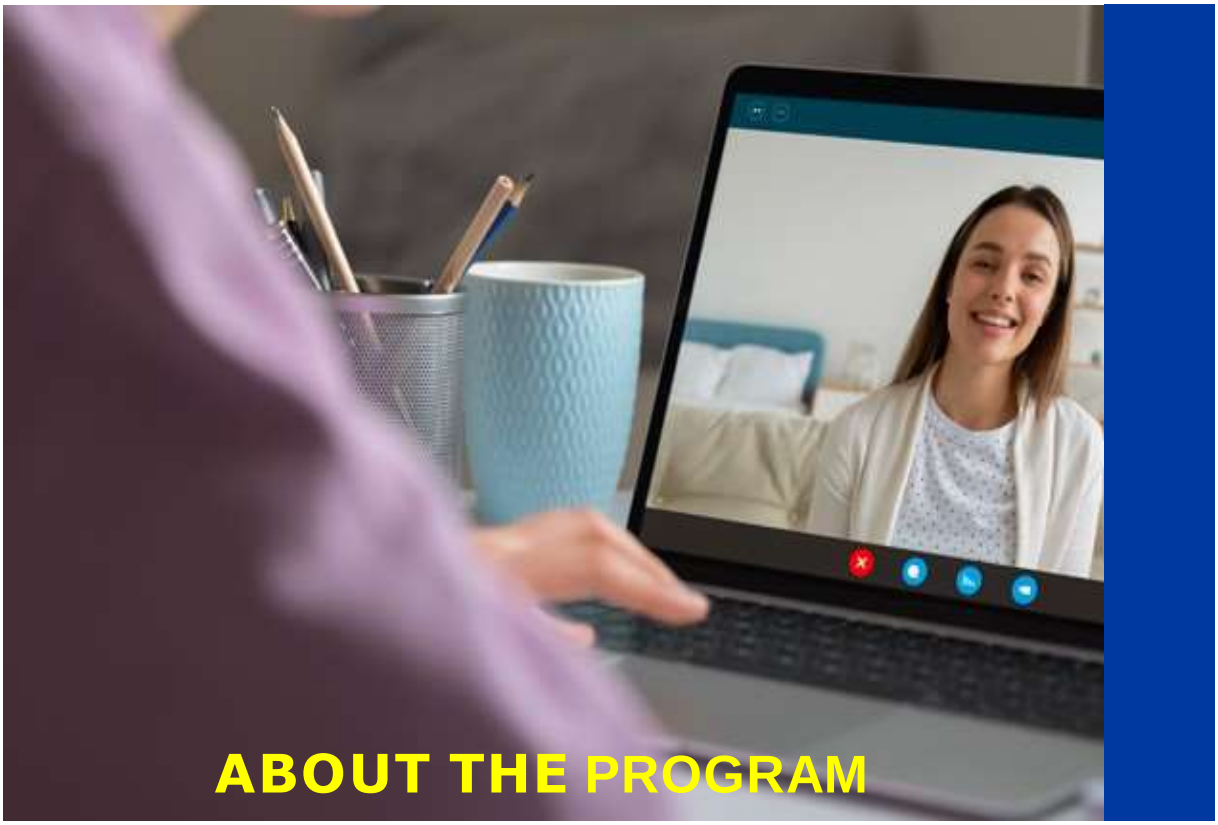
ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

Now Featuring ChatGPT and Generative AI Modules

3 YEARS OF EXCELLENCE

120+ SUCCESSFUL BATCHES

Government of Nepal
Ministry of Education
Science and Technology



ABOUT THE PROGRAM

A relentless industry focus - that's how the PGP-AIML has been able to empower thousands of career transitions. All parts of the program experience are designed to make learners job-ready. But here's the challenge - the industry keeps evolving all the time. Only high-quality learning has the power to transform lives, so we have high standards for our programs.

With inputs from industry professionals, top academicians, and recently graduated alums, the PGP-AIML is your best bet for a rewarding Artificial Intelligence career.

7.1Mn+
Learners

160+
Countries

4800+
Industry Experts

1600+
Companies Hire From Us

Best Online Skills Provider of theYear*

* Entrepreneur, Education Innovation Awards 2022

WHAT MAKES THE PGP-AIML UNIQUE?

Covers the latest AI/ML technologies including Deep Learning, Computer Vision, NLP, Reinforcement Learning, Neural Network, TensorFlow, Generative AI like ChatGPT and many more.

12+ hands-on projects using AI and ML lab. This also features case studies, industry sessions with leading experts and learning from some of the top global companies like Uber, Netflix, Google, Amazon etc. .

For every assignment you work as part of this program, you will get to see the solutions of the assignment as recorded walkthroughs. Recorded walkthroughs help you to understand the concepts better and analyze a problem from the view of an expert.

As part of this program, you will be making all of your submissions on Github. Github is an online repository which helps you to store all the projects and assignments you have done as part of this program in a single place. Today, most companies look at potential recruits' Github profiles to check their technical expertise before hiring them.

Designed by leading academic and industry experts along with CIMN faculty.

3 YEARS OF DELIVERING EXCELLENCE

3.5
out of 4 Overall Program Rating

99%
Sessions Rated 4 and above out of 5

4.8
out of 5 Average Session Rating

PROGRAM PEDAGOGY

1. Program Delivery

The program is delivered in an online format with weekend mentorship sessions that span over 12 months.

2. Online-Learning Management System

All candidates have access to the online LMS that hosts content (lecture recordings, discussion forums, assignments, reading material) and live webinars to enable the candidates to continue their learning during campus. The LMS provides an innovative learning environment that encourages collaborative approach between the candidates thus paving the way for maximizing learning effectiveness.

3. Capstone Project

All candidates would be pursuing an application-oriented capstone project in the field of Artificial Intelligence and Machine Learning. The project shall be mentored and evaluated by faculty from Great Lakes Institute of Management or industry experts. The project will be presented to the faculty board as part of the requirement for successful completion of the program.

4. Industry Perspective Lectures

This is an important component of the program that complements and substantiates learning with an applied orientation. The participants get the opportunity to listen to eminent speakers from leading Artificial Intelligence and Machine Learning companies and assimilate the best practices discussed by them in their lectures.

5. Experiential Learning

This program is designed to transform candidates to business-ready Artificial Intelligence and Machine Learning professionals through hands-on experiential learning of relevant tools. This is achieved through hands-on labs, practice exercises, hackathons, quizzes and assignments on software packages such as Python, NLP and Deep Learning.

PROGRAM CURRICULUM

PYTHON BOOTCAMP FOR NON-PROGRAMMERS

This bootcamp serves as a training module for learners with limited or no programming exposure. It enables them to be at par with those learners who have prior programming knowledge, before the program commences. This is an optional but open-to-all module. More than 1000 learners have successfully leveraged it to create a strong foundation of programming knowledge necessary to succeed as an AI/ML professional.

FOUNDATIONS

MODULE 1

Introduction to Python

- Python Basics
- Python Functions and Packages
- Working with Data Structures, Arrays, Vectors & Data Frames
- Jupyter Notebook – Installation & Function
- Pandas, NumPy, Matplotlib, Seaborn

SELF PACED MODULE

EDA and Data Processing

- Data Types
- Dispersion & Skewness
- Uni & Multivariate Analysis
- Data Imputation
- Identifying and Normalizing Outliers

MODULE 2

Applied Statistics

- Descriptive Statistics
- Probability & Conditional Probability
- Hypothesis Testing
- Inferential Statistics
- Probability Distributions

MACHINE LEARNING

MODULE 1

Supervised learning

- Linear Regression
- Multiple Variable Linear Regression
- Logistic Regression
- Naive Bayes Classifiers
- k-NN Classification
- Support Vector Machines

MODULE 2

Ensemble Techniques

- Decision Trees
- Bagging
- Random Forests
- Boosting

MODULE 3

Unsupervised Learning

- K-means Clustering
- Hierarchical Clustering
- Dimension Reduction-PCA

MODULE 4

Featurisation, Model Selection & Tuning

- Feature Engineering
- Model Selection and Tuning

- Model Performance Measures
- Regularising Linear Models
- Ml Pipeline
- Bootstrap Sampling
- Grid Search Cv
- Randomized Search Cv
- K Fold Cross-validation

MODULE 5

Recommendation Systems

- Introduction to Recommendation Systems
- Popularity Based Model
- Content based Recommendation System
- Collaborative Filtering (User similarity & Item similarity)
- Hybrid Models

ARTIFICIAL INTELLIGENCE

MODULE 1

Introduction to Neural Networks and Deep Learning

- Introduction to Perceptron & Neural Networks
- Activation and Loss functions
- Gradient Descent
- Batch Normalization
- TensorFlow & Keras for Neural Networks
- Hyper Parameter Tuning

MODULE 2

Computer Vision

- Introduction to Convolutional Neural Networks
- Introduction to Images
- Convolution, Pooling, Padding & its Mechanisms
- Forward Propagation & Backpropagation for CNNs
- CNN architectures like AlexNet, VGGNet, InceptionNet & ResNet
- Transfer Learning
- Object Detection
- YOLO, R-CNN, SSD
- Semantic Segmentation
- U-Net
- Face Recognition using Siamese Networks
- Instance Segmentation

MODULE 3

NLP (Natural Language Processing)

- Introduction to NLP
- Stop Words
- Tokenization
- Stemming and Lemmatization
- Bag of Words Model
- Word Vectorizer
- TF-IDF
- POS Tagging
- Named Entity Recognition
- Introduction to Sequential data
- RNNs and its Mechanisms
- Vanishing & Exploding gradients in RNNs
- LSTMs - Long short-term memory
- GRUs - Gated Recurrent Unit
- LSTMs Applications
- Time Series Analysis
- LSTMs with Attention Mechanism
- Neural Machine Translation
- Advanced Language Models: Transformers, BERT, XLNet

SELF-PACED MODULE

Introduction to Reinforcement Learning (RL)

- RL Framework
- Component of RL Framework
- Examples of RL Systems
- Types of RL Systems
- Q-learning

SELF-PACED MODULE

Introduction to GANs (Generative Adversarial Networks)

- Introduction to GANs
- Generative Networks
- Adversarial Networks
- How do GANs work?
- DCGANs - Deep Convolution GANs
- Applications of GANs

ADDITIONAL MODULE

- Power BI
- Cloud Computing
- Block Chain

SELF-PACED MODULE

WITH AN OPTIONAL MASTERCLASS

Demystifying ChatGPT and its Applications

- Overview of ChatGPT and OpenAI
- Timeline of NLP and Generative AI
- Frameworks for Understanding ChatGPT and Generative AI
- Implications for Work, Business, and Education
- Output Modalities and Limitations
- Business Roles to Leverage ChatGPT
- Prompt Engineering for Fine-Tuning Outputs
- Practical Demonstration and Bonus Section on RLHF

ChatGPT: The Development Stack

- Mathematical Fundamentals for Generative AI
- VAEs: First Generative Neural Networks
- GANs: Photorealistic Image Generation
- Conditional GANs and Stable Diffusion
- Transformer Models: Generative AI for Natural Language
- ChatGPT: Conversational Generative AI
- Hands-On ChatGPT Prototype Creation
- Next Steps for Further Learning and Understanding

TOOLS AND MORE

Python

Scipy

Matplotlib

Numpy

OpenCV

spaCy

seaborn

GLUON

statsmodels

TensorFlow

Tkinter

Pandas

Flask

Keras

PROJECTS

1. To identify the potential customers who have a higher probability to churn using ensemble prediction model.

A telecom company wants to use their historical customer data to predict behaviour to retain customers. You can analyse all relevant customer data and develop focused customer retention programs.

2. To cluster the vehicles as per their fuel consumption attributes and later train a regression model for an automobile dataset.

The purpose is to classify a given vehicle as one of three types of vehicles, using a set of features extracted from the silhouette. The vehicle may be viewed from one of many different angles.

3. To create an automation using computer vision to impute dynamic bounding boxes to locate cars or vehicles on the road.

City X's traffic department wants to understand the traffic density on road during busy hours in order to efficiently program their traffic lights.

4. Implementing an Image classification neural network to classify Street House View Numbers.

Recognizing multi-digit numbers in photographs captured at street level is an important component of modern-day map making. A classic example of a corpus of such street-level photographs is Google's Street View imagery composed of hundreds of millions of geo-located 360-degree panoramic images.

The ability to automatically transcribe an address number from a geolocated patch of pixels and associate the transcribed number with a known street address helps pinpoint, with a high degree of accuracy, the location of the building it represents.

More broadly, recognizing numbers in photographs is a problem of interest to the optical character recognition community. While OCR on constrained domains like document processing is well studied, arbitrary multi-character text recognition in photographs is still highly challenging. This difficulty arises due to the wide variability in the visual appearance of text in the wild on account of a large range of fonts, colors, styles, orientations, and character arrangements. The recognition problem is further complicated by environmental factors such as lighting, shadows, secularities, and occlusions as well as by image acquisition factors such as resolution, motion, and focus blur.

5.Predicting the condition of the patient depending on the received test results.

This project has two parts. In the first part we are trying to predict the condition of the patient depending on the received test results on biomechanics features of the patients according to their current conditions. In part II, we need to design a supervised learning prediction model to perform targeted marketing for executing a digital marketing campaign for a bank.

6.To build a NLP classifier which can use input text parameters to determine the label/s of the blog.

Classification is probably the most popular task that you would deal with in real life. Text in the form of blogs, posts, articles, etc. is written every second. It is a challenge to predict the information about the writer without knowing about him/her. We are going to create a classifier that predicts multiple features of the author of a given text. We have designed it as a Multi label classification problem.

7. To build a recommendation system using popularity based and collaborative filtering methods to recommend mobile phones to a user which are most popular and personalised respectively.

India is the second largest market globally for smartphones after China. About 134 million smartphones were sold across India in the year 2017 and is estimated to increase to about 442 million in 2022. India ranked second in the average time spent on mobile web by smartphone users across Asia Pacific.

If a seller succeeds to publish smartphones based on user's behaviour/choice at the right place, there are 90% chances that user will enquire for the same. This Case Study is targeted to build a recommendation system based on the individual consumer's behaviour or choice.

8. Sarcasm Detection using Bidirectional LSTMs

Past studies in Sarcasm Detection mostly make use of Twitter datasets collected using hashtag based supervision but such datasets are noisy in terms of labels and language. Furthermore, many tweets are replies to other tweets and detecting sarcasm in these requires the availability of contextual tweets. In this hands-on project, the goal is to build a model to detect whether a sentence is sarcastic or not, using Bidirectional LSTMs.

9. To build a semi-rule based text chat bot which can give static responses to the user depending on the inputs for industrial safety and incidents

Linguistic chatbots have become a must to have automation for large organisations with a huge client base. They serve as a virtual support, Helpdesk, sales agents etc enhancing the business and the customer experience.

10. To build an image classifier and object detection model which can classify a car from an image and identify the location of the car from an image by publishing a bounding box around it.

Image classifiers have become a must to have automation for organisations chasing towards employing autonomous AI bots. Computer vision can be used to automate supervision and generate appropriate action triggers if the event is predicted from the image of interest. For example a car moving on the road can be easily identified by a camera as make of the car, type, colour, number plates, etc.

11. To build an image classifier and object detection model which can classify an chest X-ray image into with/without pneumonia disease and identify the location of the chest X-ray where the disease is localised by publishing a bounding box around it.

The designed model can be used as a micro service within an application which can assist hospitals and patients to detect the health condition of the patient just by scanning the X-ray file generated. Project involves designing a full stack deep learning AI solution covering data warehousing, data cleansing, validation, machine learning model design/ validation/tuning, model freezing/baseline and model deployment using a clickable UI.

12. To build an image classifier which can classify images of dogs as per their breeds.

Image classifiers have become a must to have automation for organisations chasing towards employing autonomous AI bots. This image classifier can be a micro service for identifying if the captured image is a dog and later identifying which breed or class the animal belongs to. The learnings and experience obtained to design this automation can be trained and deployed on different image/class dataset too.

CAREER SUPPORT

E-PORTFOLIO

An e-portfolio is a snapshot of all the projects done and skills acquired during the program that is shareable across social media channels. This will help you establish your expertise to potential recruiters.

JOB BOARD

The program provides candidates access to a Job Board with job opportunities shared by 2600+ organisations. Gain an average salary hike of 50%like many other learners.

RESUME REVIEW AND INTERVIEW PREPARATION

Build your resume to highlight your skills and your previous professional experience. Also, learn how to crack interviews with interview preparation sessions.

CAREER GUIDANCE

Get access to career mentoring from industry experts who've transitioned to Artificial Intelligence and Machine Learning roles. Benefit from their guidance on how to build a rewarding career in Artificial Intelligence and Machine Learning.

COMPANIES THAT HIRE FROM US

ADMISSION DETAILS

Eligibility

Applicants should have a Bachelor's degree with a minimum of 50% aggregate marks or equivalent and familiarity with programming. For candidates who do not know Python, we offer a free pre-program tutorial.

Selection Process

APPLY
Apply by filling a simple online application form

INTERVIEW PROCESS
Go through a screening call with the Admission Director's office

JOIN PROGRAM
An offer letter will be rolled out to the selected candidates

Program Fee

`2,25,000 NPR.

PAYMENTS
Candidates can pay the program fee through net banking, credit cards, or debit cards.

*Conditions Apply. Please reach out to the admissions team for more details.

POWER AHEAD IN YOUR CAREER WITH

Central Institute of Management Nepal University

START LEARNING TODAY.

CONTACT US:-

*info@cim.edu.np
*admission@cim.edu.np
*director@edu.np

+977- 981-0784196
+977-81403101 (Nepal)
www.cim.edu.np
cimnuniversity@gmail.com

Central Institute of Management Nepal University