Professional Diploma in Data Science and Artificial Intelligence

Digital Career Induction Program

CLaaS
UDE
digital skilling

Work-Integrated CLaaS with Skills Certification & Master's Degree

Acquire **industry-relevant** skills with our Intensive Digital Skilling Bootcamp

Industry-level knowledge & certification

Job Placement Assistance

Program Overview

Asia Pacific spending on Big Data and Data Analytics solutions will reach $42.2 billion in 2023, close to a 20% increase from 2022*. It is expected this growth will continue year on year owing to the incremental demand of organisations making data-driven decisions every day.

This has resulted in a continuous demand for data science professionals who are responsible to turn those spending into tangible and impactful business outcomes.

Personalized, work-integrated & outcome-based learning journey to enable you to perform from day one of your new career

CLaaS is designed on a competency-based curriculum in alignment with Singapore's skills framework for bridging digital skills gap to develop future-ready talents with job-specific knowledge, skills, and abilities.

Work-integrated learning is implemented with the adoption of the 70:20:10 learning model to deliver improved KSAs (Knowledge, Skills, and Abilities).

We deliver collaborative, blended learning with:

- Self-Paced E-Learning
- Live Flipped Classes
- Social Learning
- Real-world Projects
- Mentoring Support

Job Placement Assistance is provided through career-builder workshops consist of resume-building, interview coaching, and industry insights sharing to prepare learners for interviews ahead. 1-to-1 coaching session is also provided to plan and align learner's personal career aspirations and expectations with the upcoming job opportunities.
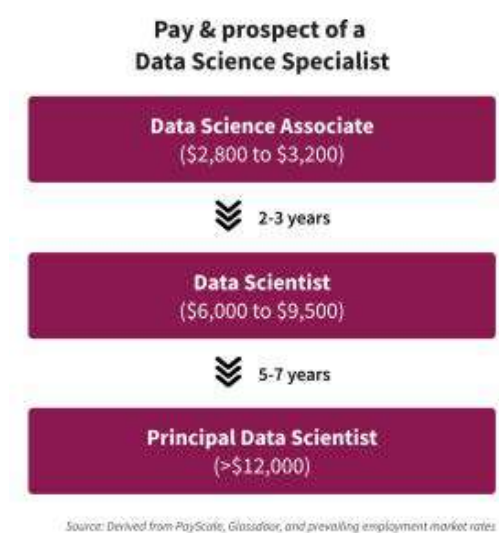
	Delivery Mode	Synchronous & Asynchronous E-learning
	Language	English
	Duration	12 months part-time (3 - 3,5 hours per day)
	Structure	7 Modules (5-7 Instructional Units per module)
	Eligibility	- Reading and writing proficiency in English - Minimum 21 years-old - Minimum second-class bachelor's degree in any field from recognized universities - Non graduates with professional qualification, polytechnic diploma in IT/CS, and matured candidate with relevant experience will be considered on a case-to-case basis
		Minimum attendance of 90% in the bootcamp, 75% in all part-time sessions and minimum pass grade in the summative assessment is required for graduation

Career Prospects

Future-ready your career as a Data Science Specialist to achieve growth in the digital economy

With the exponential growth of data, businesses increasingly rely on data-driven insights to inform strategic decisions. Across Asia-Pacific, the demand for data scientists is fueled by the increasing adoption of advanced analytics and artificial intelligence, projected to grow by 31% from 2020 to 2030, much faster than the average for all occupations.

Pay & prospect of a Data Science Specialist

Data Science Associate
($2,800 to $3,200)

⌄⌄ 2-3 years

Data Scientist
($6,000 to $9,500)

⌄⌄ 5-7 years

Principal Data Scientist
(>$12,000)

Source: Derived from PayScale, Glassdoor, and prevailing employment market rates

The ability to derive actionable insights from data not only enhances decision-making but also positions professionals as valuable assets in an era where data is a cornerstone of innovation and business success.

As industries continue to undergo digital transformation, individuals with expertise in data science will find themselves at the forefront of opportunities, driving career growth and ensuring relevance in the evolving job market in diverse sectors such as finance, healthcare, technology, and e-commerce

Data Science Specialist: Roles and Responsibilities

You'll be a professional who applies scientific methods, processes, algorithms, and systems to extract insights and knowledge from structured and unstructured data.

Data Analysis and Exploration:

- Analyze large datasets to identify trends, patterns, and insights.
- Conduct exploratory data analysis (EDA) to understand the characteristics of the data.

Data Visualization:

- Communicate findings and insights through effective data visualization techniques.
- Create visualizations to help stakeholders understand complex data patterns.

Model Development:

- Develop machine learning models to solve specific business problems.
- Choose appropriate algorithms and techniques for model development.
- Fine-tune models for better performance.

Statistical Analysis:

- Apply statistical methods to validate hypotheses and make data-driven decisions.
- Conduct hypothesis testing to assess the significance of observations.

Feature Engineering:

- Create new features or modify existing ones to improve model performance.
- Select relevant features that contribute to the model's predictive power.

Machine Learning Implementation:

- Implement machine learning algorithms and models using programming languages like Python or R.
- Deploy models into production environments.

*Specific roles and responsibilities of a Data Science Specialist varies depending on the organization, industry, and the specific focus of the role.

Drive Innovation with Data and AI

Be equipped to thrive in data-centric roles, solving complex business problems, and making data-driven decisions that drive organizational success.

Our industry-relevant curriculum ensures that learners are well-prepared to address the challenges of today's data-driven world, making them highly sought-after by employers seeking professionals who can leverage the power of data and AI to gain a competitive advantage.

ANALYSE with POWER BI

Discover intelligent insights in diverse data. Unify data to create immersive dashboards and reports that provide actionable insights and drive business results.

VISUALISE with PHYTON

Transform raw data into compelling visual stories, leveraging Python's capabilities to create impactful charts, graphs, and interactive visuals for comprehensive data exploration.

EXPLORE with CHATGPT

Harness its language generation prowess for creative content production and efficient problem-solving. Unlock innovative solutions and articulate ideas seamlessly through dynamic conversations with ChatGPT's advanced capabilities.

SUPPORT with POWER VA

Develop intelligent chatbots that provide seamless and personalized support. Streamline customer interactions, troubleshoot common issues, and enhance user experiences with the efficiency of Power VA's automated support solutions.

MANAGE with CLICKUP

Master the art of task organization, team collaboration, and project tracking. Utilize ClickUp's robust features to efficiently manage projects, assign tasks, set milestones, and optimize workflows for successful project outcomes.

Course & Module Overview

Academic Qualification
Professional Diploma in Data Science & Artificial Intelligence - issued by Educlaas, India

Price
USD 3,000 (Part-time)

Knowledge, Skills, and Abilities Outcomes:

Knowledge:
- Analyze diverse datasets to extract valuable insights using various data analytics techniques.
- Implement Python programming to develop data science and AI solutions effectively.
- Describe the principles and applications of applied machine learning in real-world scenarios.
- Examine the concepts and architectures of generative AI models for creative data generation.
- Identify the fundamental concepts and applications of deep learning in computer vision and NLP.

Skills
- Build and optimize predictive models for diverse applications through machine learning techniques.
- Develop and deploy sophisticated AI models using deep-learning neural networks.
- Manage projects efficiently within dynamic environments through agile project management.
- Communicate data-driven findings and solutions effectively to stakeholders and non-technical audiences.
- Apply acquired knowledge and skills to solve industry-specific challenges through practical projects.

Abilities:
- Leverage data and AI technologies strategically to drive data-driven innovation and decision-making across diverse domains.

Blended Learning Journey
484 Hours

E-Learning	84 hours
Flipped Class	86 hours
Project/Mentoring	310 hours
Assessment	4 hours

Data Analytics

5 Instructional Units

Certificate(s)
Microsoft Power BI Data Analyst (PL 300)

Acquire expertise in data modeling and visualization using Power BI, starting with foundational concepts, cleaning and preparing data, creating efficient data models, designing insightful reports, and developing interactive dashboards.

Generative AI

5 Instructional Units

Certificate(s)
PCAD™ – Certified associate in data analytics with Python

Learn the essential Python skills for data analysis and visualization, including Python fundamentals, data manipulation with Pandas, numerical computations with NumPy, and data visualization using Matplotlib and Seaborn.

Low Code App Development

7 Instructional Units

Certificate(s)
-

Our "Low Code App Developer" course transforms learners into adept tech practitioners, imparting skills for roles like Low-Code Developer and Power Platform Developer. It combines technical expertise with business acumen, ensuring graduates excel in the ever-evolving tech industry.

Capstone Project – Data & AI

5 Instructional Units

Certificate(s)
-

Collaborate with industry professionals, applying advanced data analytics, machine learning, and AI techniques to solve real-world challenges for impactful contributions in Data Science and AI roles.

Data Science Essentials

7 Instructional Units

Certificate(s)
-

The "Data Science Fundamentals" module imparts crucial knowledge and skills for navigating the data-driven landscape, covering topics such as AI, data pre-processing, and Automated Machine Learning. Hands-on projects reinforce practical application.

Applied Machine Learning

7 Instructional Units

Certificate(s)
Microsoft Certified: Azure AI Engineer Associate (AI-102)

Gain expertise in supervised and unsupervised learning, enhancing model performance through techniques like feature selection and hyperparameter tuning. Master the implementation of machine learning pipelines and acquire hands-on experience in deploying models.

Deep Learning

7 Instructional Units

Certificate(s)
-

Learn vital AI and Deep Learning knowledge, covering concepts like Artificial Neural Networks, CNNs, and RNNs to optimize model performance, implement deep learning pipelines, and deploy models effectively.

Capstone Project - Data Science & AI

7 Instructional Units

Certificate(s)
-

Covering a spectrum of topics such as Data Analytics, Python Programming, Applied Machine Learning, Deep Learning, Generative AI, and Agile Project Management, the course lays a strong foundation.

Leverage data-informed insights and decision-making

Implement Power BI for data analytics and visualization to make data-driven decisions, communicate insights effectively, and excel in the dynamic field of data analytics and visualization.

Perform Effective Data Analysis
Learn to perform comprehensive data analysis using key concepts and techniques.

Execute Data Transformation
Develop the skills to execute data transformation, ensuring data quality and reliability in Power BI.

Design Informative Reports
Acquire the ability to design visually appealing and informative reports for effective data communication.

Create Interactive Dashboards
Master the creation of interactive dashboards, facilitating user interaction and data-driven decision-making.

Apply Knowledge in Real-world Scenarios
Apply acquired skills in practical projects, enhancing proficiency in data modeling and visualization techniques using Power BI in real-world scenarios.

Module 01: Data Analytics

Introduction to Data Analytics and Power BI
6 hours

Power BI data transformation
6 hours

Power BI Data Modelling
6 hours

Power BI Formatting, Reports and Dashboards
6 hours

Introduction to Business Simulation and MonsoonSIM
12 hours

Problem-Solving and Collaboration in Business Simulation
22 hours

60.5 Hours
of Blended Learning Journey

E-Learning
12 hours

Flipped Class
12 hours

Project/Mentoring
36 hours

Assessment
0.5 hours

Data Analytics

Enhance Problem-solving abilities

Leverage generative AI tools like ChatGPT and Microsoft Power Virtual Agent (VA) for diverse purposes, including research and content generation, multimedia presentations, business productivity, and customer support.

Understand Generative AI Fundamentals

cquire a comprehensive understanding of Generative AI Models, exploring their functionalities and capabilities.

Explore OpenAI and ChatGPT

Gain insights into OpenAI and focus on the practical implementation of ChatGPT, a powerful language generation model.

Uncover Real-world Applications

Delve into ChatGPT's practical applications in research, content generation, business productivity, and customer support, gaining hands-on experience.

Leverage Generative AI Tools

Develop practical expertise in using Generative AI tools like ChatGPT and Microsoft Power Virtual Agent (VA) to create engaging and interactive content.

Build Functional ChatBots

Empower yourself to build functional ChatBots using Microsoft Power VA, enabling seamless interactions with users and applying acquired knowledge in real-world scenarios.
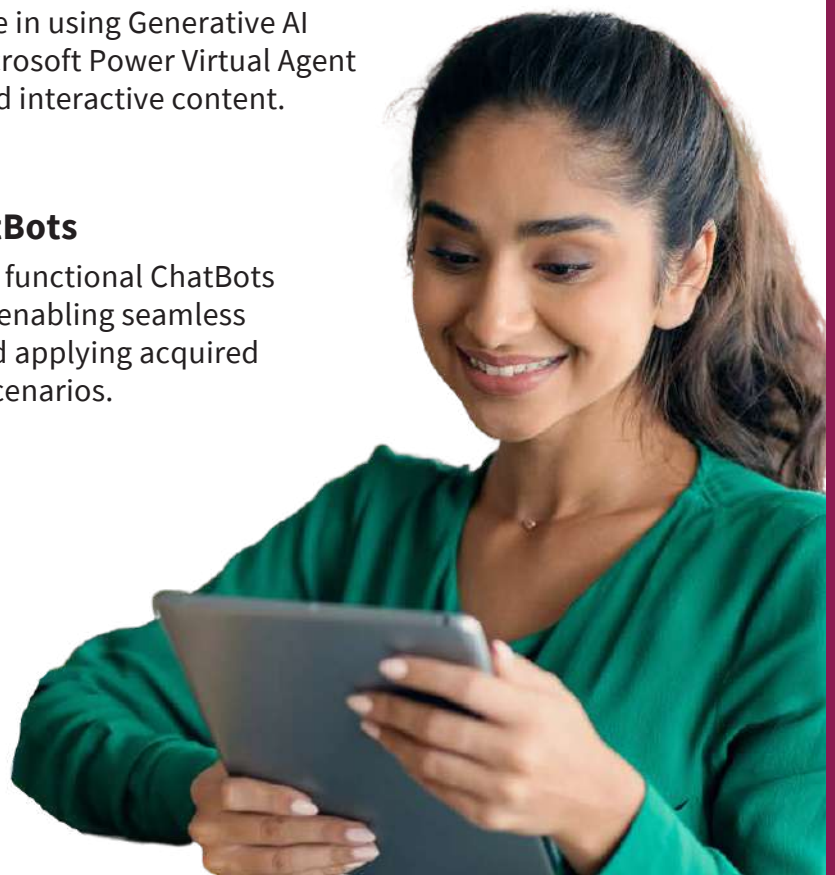
Enhance problem-solving abilities

Module 02: Generative AI

Introduction to Generative AI Models & Tools
6 hours

Fundamentals of Prompt Engineering
6 hours

Advanced Usage of Prompt Engineering
18 hours

Microsoft 365 Copilot Use Cases for Productivity
12 hours

Microsoft Power Virtual Agents for Chatbot Creation
18 hours

60.5 Hours
of Blended Learning Journey

E-Learning
18 hours

Flipped Class
20 hours

Project/Mentoring
22 hours

Assessment
0.5 hours

Transformative Journey Into the Realm of App Development

Gain expertise in data modeling and emerge as a sought-after tech practitioner in roles like Low-Code Developer or HR Tech Specialist.

Comprehensive Low-Code Training

Embark on a transformative journey in app development, gaining skills to thrive in low-code landscapes, turning into tech practitioners for diverse job functions.

Strategic Power Platform Mastery

Delve into the course's core, understanding the business value of Power Platform, and explore Power Automate components for efficient workflow automation.

Excel and Document Integration Expertise

Unlock Power Automate potential using Excel and Document Generation, empowering learners to leverage these tools for robust application functionality and expanded scope.

Data Modeling and App Development Proficiency

Explore the intricacies of data modeling and create model-driven applications, solidifying theoretical understanding while imparting practical skills for user-friendly, business-tailored apps.

Interactive Canvas App Design:

Progress into Canvas App development, mastering visually engaging applications with a focus on user interfaces. Each unit serves as a stepping stone to enhance skills for diverse job opportunities.

Module 03: Low Code App Development

- **Business value of Power Platform**
  6 hours

- **Exploring Power Automate Core Components**
  6 hours

- **Dynamic Decision-Making in Power Automate Workflows**
  6 hours

- **Unlocking Power Automate Potential with Excel and Document Generation**
  6 hours

- **Data modelling and model-driven app**
  6 hours

- **Design a Canvas app**
  30 hours

60.5 Hours
of Blended Learning Journey

E-Learning
12 hours

Flipped Class
12 hours

Project/Mentoring
36 hours

Assessment
0.5 hours

Apply Data Science & AI expertise to develop innovative solutions

Synthesize and apply acquired knowledge in a real-world context, collaborating with industry professionals to tackle authentic challenges.

Synthesize Knowledge

Apply acquired knowledge in Data Science and AI by undertaking a real-world industry project within the Comprehensive Diploma program.

Collaborate with Professionals

Collaborate with industry professionals to address authentic challenges, gaining insights and expertise from real-world contexts.

Advanced Data Exploration

Rigorously explore data analytics, machine learning, and AI techniques, developing an advanced understanding of data-driven decision-making.

Precision in Project Scoping

Learn to meticulously scope projects and engage stakeholders, establishing precise objectives for effective project management.

Enhance Soft Skills

Develop vital soft skills, including communication, collaboration, ethical professionalism, critical thinking, innovation, and adaptability, preparing learners for dynamic roles in the industry.

Module 04: Capstone Project - Data Science & AI

- **Create Project Plan and user Personas**
  2 hours

- **Prepare, transform, and model Data for Analytics**
  10 hours

- **Design Interactive Dashboard and Reports**
  8 hours

- **Data collection and design flow for chatbot design**
  2 hours

- **Design custom topics, entities for chatbot design**
  2 hours

- **Test and Publish chatbot**
  2 hours

- **Selection of core components and design of low code application**
  24 hours

- **Test and deploy low code application**
  8 hours

60.5 Hours
of Blended Learning Journey

E-Learning
- hours

Flipped Class
- hours

Project/Mentoring
60 hours

Assessment
0.5 hours

Gain Knowledge & Skills Crucial for Navigating the Data-driven Landscape

Emerge with a comprehensive skill set encompassing data fundamentals, AI principles, pre-processing techniques, and practical experience in deploying automated machine learning solutions.

Foundational Knowledge Spectrum

The module covers a range of topics from Data Fundamentals to Automated Machine Learning, providing an essential foundation for aspiring data scientists.

Practical Application through Projects

Learners apply theoretical concepts in hands-on projects, starting with data pre-processing on a flight delay dataset, gaining practical insights into managing raw data.

AutoML Exploration for Regression

Participants leverage pre-processed data to explore Automated Machine Learning (AutoML) for regression tasks, gaining hands-on experience and understanding the role of automation in streamlining processes.
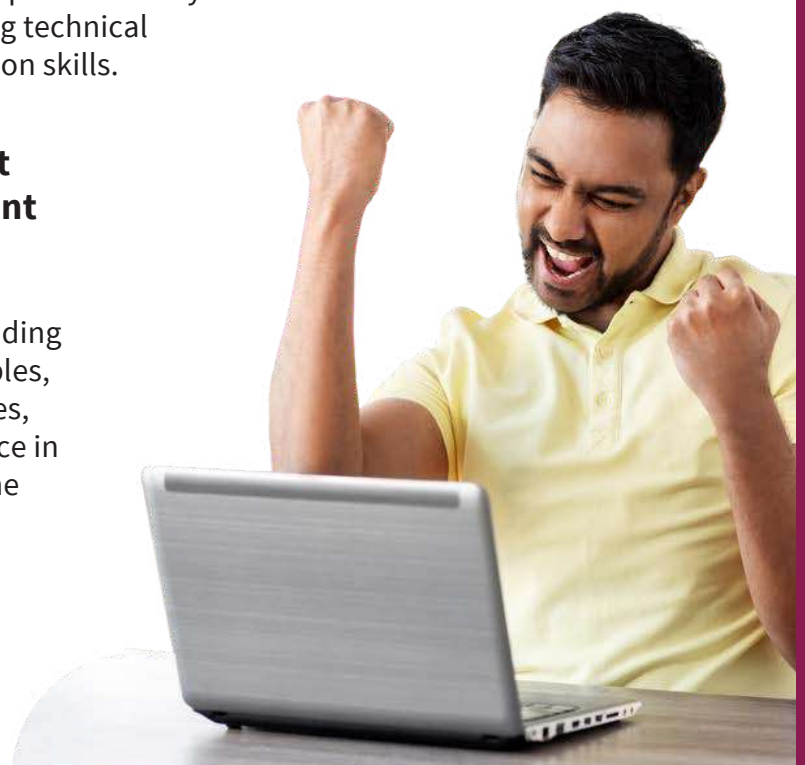
Algorithm Exploration and Comparative Study

The module culminates in exploring various machine learning algorithms within the AutoML framework, conducting a comparative study on generated models, sharpening technical proficiency and model selection skills.

Comprehensive Skill Set and Practical Deployment

By the module's conclusion, learners emerge with a comprehensive skill set, including data fundamentals, AI principles, and pre-processing techniques, along with practical experience in deploying automated machine learning solutions.

Module 05: Data Science Essentials

Data Science and Storage Technologies
6 hours

Artiβicial Intelligence Solutions
6 hours

Data Preprocessing
12hours

Introduction to Machine Learning
12 hours

Automated Machine Learning
6hours

60.5 Hours
of Blended Learning Journey

E-Learning
14 hours

Flipped Class
14 hours

Project/Mentoring
32 hours

Assessment
0.5 hours

Implement & deploy machine learning models

Acquire a solid foundation in machine learning concepts and techniques to tackle various machine learning tasks, optimize model performance, implement machine learning pipelines, and deploy models effectively.

Build Fundamentals

Acquire a strong foundation in machine learning principles, exploring its applications and gaining insights into supervised and unsupervised learning.

Model Development

Learn to develop machine learning models for classification and regression tasks, enhancing skills in addressing real-world challenges.

Performance Enhancement

Focus on optimizing model performance by mastering techniques like feature selection and hyperparameter tuning for better accuracy and efficiency.

Implement Pipelines

Understand the design and implementation of machine learning pipelines, covering data preprocessing, model training, and performance evaluation.

Real-world Application

Engage in practical projects to reinforce understanding, applying learned concepts in real-world scenarios.

Module 06: Applied Machine Learning

Regression tasks
6 hours

Classification tasks
10hours

Clustering tasks
12 hours

Azure AI Services for Pre-built models
6 hours

Text Analysis with the Language Service
4 hours

60.5 Hours
of Blended Learning Journey

E-Learning
14 hours

Flipped Class
14hours

Project/Mentoring
32 hours

Assessment
0.5 hours

Implement & deploy deep learning models

Explore techniques for optimizing model performance and develop proficiency in implementing deep learning pipelines to solve complex image recognition problems, and advance in the field of AI and Computer Vision.

Comprehensive AI Understanding

Gain a thorough understanding of AI and Deep Learning concepts, including Artificial Neural Networks, CNNs, and RNNs.

Optimize Model Performance

Explore techniques for optimizing the performance of Deep Learning models, enhancing your proficiency in model implementation.

Implement Deep Learning Pipelines

Develop skills in implementing deep learning pipelines, covering various stages from data processing to model deployment.

Deploy Models Effectively

Learn how to deploy Deep Learning models effectively in real-world applications, bridging the gap between theory and practical deployment.

Solve Image Recognition Challenges

Acquire the ability to implement Deep Learning models, specifically CNNs, for image recognition tasks. Train models, fine-tune performance, and deploy them for real-world image recognition applications.

Module 07: Deep Learning

Introduction to Computer Vision
6 hours

Face Recognition and optical character recognition
12 hours

Image Classification
6 hours

Introduction to Natural Language Processing
12 hours

Conversational Language understanding
8 hours

60.5 Hours
of Blended Learning Journey

E-Learning
14 hours

Flipped Class
14 hours

Project/Mentoring
32 hours

Assessment
0.5 hours

Building Hands-On Skills for Future Careers

Enabling graduates to contribute effectively to the industry and make a positive impact in the dynamic field of data science
and AI.

Application of Knowledge and Skills

The Capstone Project offers a pivotal opportunity for learners to apply knowledge and skills gained in preceding modules of the Professional Diploma in Data Science & AI.

Refined Practical Skills

Engaging in real-world projects, students refine practical skills in data analytics, Python programming, applied machine learning, deep learning, generative AI, and agile project management.

Immersive Industry Experience

Learners immerse themselves in day-to-day operations of live industry projects, applying technical skills in data analysis, machine learning model development, and utilizing deep learning techniques.

Comprehensive Data Science Lifecycle Understanding

Through hands-on experience with industry-standard tools and collaboration with professionals, students gain a comprehensive understanding of the entire data science lifecycle.

Well-Rounded Professionals

The Capstone Project positions learners as well-rounded data science and AI professionals, enhancing technical proficiency while cultivating critical thinking, problem-solving, and communication skills in a professional context.
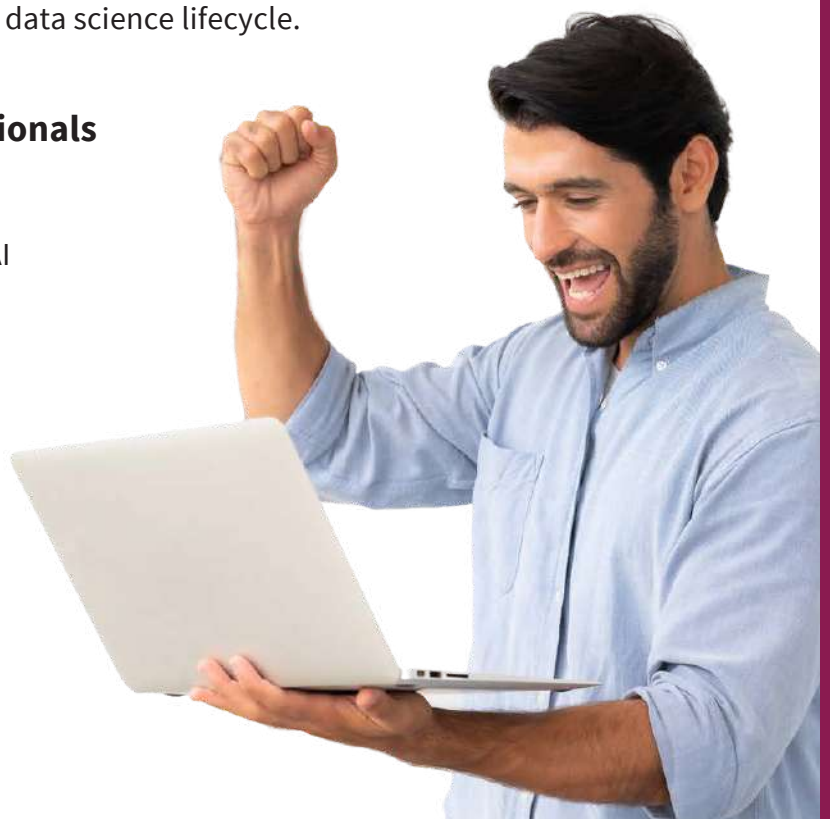
Module 08: Capstone Project-Data Science & AI

- **Develop credit card fraud detection model.**
  12 hours

- **Provision and configure Azure ML services for fraud detection.**
  8 hours

- **Perform sentiment analysis on customer reviews.**
  8 hours

- **Enhance customer engagement and satisfaction**
  8 hours

- **Utilize Azure AI Language services for text insights.**
  4 hours

- **Implement Optical Character Recognition (OCR) system to extract text from handwritten documents.**
  8 hours

- **Design and implement an FAQ chatbot.**
  10 hours

- **Create a knowledge base for common queries.**
  6 hours

- **Design, test and deploy the chatbot to answer customer queries.**
  4 hours

60.5 Hours
of Blended Learning Journey

E-Learning
0 hours

Flipped Class
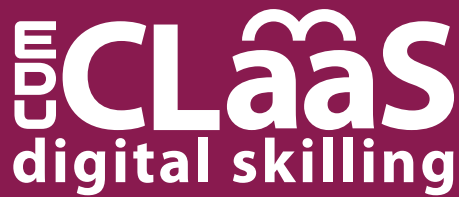**0** hours

Project/Mentoring
60 hours

Assessment
0.5 hours

Deep Learning

Future-Proof Your Career with CLaaS **TODAY!**

- ✓ **Self-Paced E-Learning**

- ✓ **Instructor-Led Flipped Classes**

- ✓ **Industry-Expert Mentoring**

- ✓ **Peer-to-Peer Social Learning**

EDUCLaaS
digital skilling

BRIDGING DIGITAL DIVIDE AND RISING INEQUALITY

Reimagining Education as a Global Common Good

We aim to bridge the missing connection between education and the workplace by fostering a tripartite partnership across public, private, and non-profit sectors, to recontextualize education as a global common good for lifelong applied learning delivery, to develop future-ready talents and enterprises in the glocalized digital economy.

>50,000 Learners

100+ Pan-Asia Campuses

>2,000 Enterprises