# **Professional Diploma in Data Science and Artificial Intelligence**

**Digital Career Induction Program** 







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<sup>\*</sup>. 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
0	Duration	12 months part-time (3 - 3,5 hours per day)
	Structure	7 Modules (5-7 Instructional Units per module)
	Eligibility	<ul> <li>Reading and writing proficiency in English</li> <li>Minimum 21 years-old</li> <li>Minimum second-class bachelor's degree in any field from recognized universities</li> <li>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</li> </ul>
<b>(</b>	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.



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 ecommerce

#### **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:	Data Visualization:
<ul> <li>Analyze large datasets to identify trends,</li></ul>	<ul> <li>Communicate findings and insights through</li></ul>
patterns, and insights. <li>Conduct exploratory data analysis (EDA) to</li>	effective data visualization techniques. <li>Create visualizations to help stakeholders</li>
understand the characteristics of the data.	understand complex data patterns.
Model Development:	Statistical Analysis:
<ul> <li>Develop machine learning models to solve</li></ul>	<ul> <li>Apply statistical methods to validate hypotheses</li></ul>
specific business problems. <li>Choose appropriate algorithms and techniques</li>	and make data-driven decisions. <li>Conduct hypothesis testing to assess the</li>
for model development. <li>Fine-tune models for better performance.</li>	significance of observations.
Feature Engineering:	Machine Learning Implementation:
<ul> <li>Create new features or modify existing ones to</li></ul>	<ul> <li>Implement machine learning algorithms and</li></ul>
improve model performance. <li>Select relevant features that contribute to the</li>	models using programming languages like
model's predictive power.	Python or R. <li>Deploy models into production environments.</li>

\*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.

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Blended Learning Journey 484 Hours

E-Learning	84 hours
Flipped Class	86 hours

Project/Mentoring 310 hours

Assessment 4 hours



#### **Module 01: Data Analytics**

### Leverage data-informed insights and decision-making

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.

#### 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 Bl.



#### 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.



- Introduction to Data Analytics and Power BI
- Power BI data transformation
- Power BI Data Modelling
- Power BI Formatting, Reports and Dashboards
- Introduction to Business Simulation and MonsoonSIM
- Problem-Solving and Collaboration in **Business Simulation**



# **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**

Acquire 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.



### **5 Instructional Units**

Introduction to Generative AI Models & Tools

- Fundamentals of Prompt Engineering
- Advanced Usage of Prompt Engineering
- Microsoft 365 Copilot Use Cases for Productivity
- **Microsoft Power Virtual Agents for** Chatbot Creation



### **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 lowcode landscapes, turning into tech practitioners for diverse job functions.



#### 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.



#### **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.

#### 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.



- **Business value of Power Platform**
- Exploring Power Automate Core Components
- Dynamic Decision-Making in Power Automate Workflows
- Unlocking Power Automate Potential with **Excel and Document Generation**
- Data modelling and model-driven app
- Design a Canvas app



### **Apply Data Science & Al 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.



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#### Precision in Project Scoping

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

- Create Project Plan and user Personas
- Prepare, transform, and model Data for Analytics
- **Design Interactive Dashboard and Reports**
- Data collection and design flow for chatbot design
- Design custom topics, entities for chatbot design
- Test and Publish chatbot
- Selection of core components and design of low code application
- Test and deploy low code application



## 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.



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#### 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.

#### AutoML Exploration for Regression $(\checkmark)$

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.



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.

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#### **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.



- **Regression tasks**
- **Classification tasks**
- **Clustering tasks**
- Azure AI Services for Pre-built models
- Text Analysis with the Language Service



#### Module 07: Deep Learning

### 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 Al 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.



#### **5 Instructional Units**

Introduction to Computer Vision

Face Recognition and optical character recognition

Image Classification

Introduction to Natural Language Processing

Conversational Language understanding



# **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.



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#### 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.

- Develop credit card fraud detection model.
- Provision and configure Azure ML services for fraud detection.
- Perform sentiment analysis on customer reviews.
- Enhance customer engagement and satisfaction
- Utilize Azure AI Language services for text insights.
- Implement Optical Character Recognition (OCR) system to extract text from handwritten documents.
  - Design and implement an FAQ chatbot.
- Create a knowledge base for common queries.
- Design, test and deploy the chatbot to answer customer queries.



#### A 3 step integrated work-study journey



#### What Our Students Say About Us



**Sharina Gan** Professional Diploma in Data Science

"I would like upgrade my digital skills and Lithan has bite-size contents to guide me through. Learning is fun with exposure to real-world projects and the trainers are patient as well"



Muhammad Reezuan B Rabu Advanced Certificate in Infocomm Technology

"It wasn't easy for me as I was working and studying at the same time. Time management was key, and the mentors helped me to plan my time well for the assignments"



Mohamed Fairos Professional Diploma in ERP systems

"I wanted to upgrade my self in SAP and learning in Lithan is very productive. The trainers are very helpful and have deep knowledge in the subject matter."



**Andre Lee** Professional Diploma in Digital Marketing

"I was a traditional sales & marketing manager and the trainers are very helpful. I can now gather more than 700 likes for my company Facebook posts and lead to an increase in sales.

#### Accreditations

eduCLaaS accredited by the Singapore government as a CET Centre (Continuing Education and Training), Edutrust certified by Committee for Private Education (CPE), and Internationally accredited by Pearson UK and Scottish Qualifications Authority (SQA).



#### **Learning Partners**

A global network of 100+ campuses & virtual campuses, also over 2,000+ partners that offers borderless learning environment to students from around the world.





## 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.







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