No Code

AI and Machine Learning

Specialization

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About the Program

Welcome to the No Code AI and Machine Learning Specialization program, a collaboration between Purdue University Online and Simplilearn. This groundbreaking program is designed to democratize the power of artificial intelligence. It empowers individuals with the skills and knowledge to build and deploy machine learning models without extensive coding experience.

Throughout this program, you will learn how to leverage various no-code AI platforms to perform data analysis, build predictive models, and make data-driven decisions. You will also gain hands-on experience with a range of tools, including drag-and-drop interfaces, automated machine learning, and visual workflows.

Our curriculum covers key concepts in machine learning, including supervised and unsupervised learning, regression and classification algorithms, and model evaluation. You will also learn how to prepare and preprocess data and deploy and integrate machine learning models into your applications.

Whether you are a business analyst, data analyst, product manager, consultant, or simply someone interested in learning about machine learning without coding, this program is for you. Our expert instructors will guide you through each step of the process, providing you with the tools and resources you need to succeed in the world of no-code AI & machine learning.

Key Features of the Program

Program completion certificate from Purdue University Online and Simplilearn

Access to Purdue's alumni association membership on program completion

50+ hours of core curriculum delivered in live online classes by industry experts

Apply your knowledge through hands-on projects spanning various industries

Live online masterclasses delivered by Purdue faculty and staff

Gain exposure to Amazon SageMaker Canvas, DataRobot, Dataiku, and other prominent tools

Dedicated add-on course on generative AI, prompt engineering and ChatGPT

Simplilearn's JobAssist helps you get noticed by top hiring companies

About Purdue University

A beacon of academic excellence, Purdue University is located in West Lafayette, Indiana. With a rich history dating back to its founding in 1869, Purdue has evolved into a prestigious institution renowned for its commitment to innovation, research, and education.

At the heart of Purdue's mission is its dedication to fostering intellectual curiosity and preparing students to tackle the challenges of tomorrow. With a diverse array of undergraduate, graduate, and professional programs spanning disciplines from engineering to liberal arts, Purdue offers students a comprehensive educational experience that equips them with the skills and knowledge to thrive in a rapidly changing world.

Purdue University boasts a distinguished faculty of leading scholars, researchers, and industry experts at the forefront of their respective fields. Through their mentorship and guidance, students are encouraged to explore their passions, push boundaries, and pursue groundbreaking research that addresses pressing global issues.

About Simplilearn

Simplilearn is the world's #1 online bootcamp provider, enabling learners around the globe with rigorous and highly specialized training offered in partnership with world-renowned universities and leading corporations. We focus on emerging technologies and skills transforming the global economy, such as artificial intelligence, data science, cloud computing, programming, and more. Our hands-on and immersive training includes live virtual classes, integrated labs and projects, 24x7 support, and a collaborative learning environment. Over two million professionals and 2000 corporate training organizations across 150 countries have harnessed our award-winning programs to achieve their career and business goals.

Eligibility Criteria

For admission to this No Code AI and Machine Learning Specialization, candidates:

- ✔ Should be at least 18 years old and have a high school diploma or equivalent
- ✔ Are encouraged to have 2+ years of professional work experience, but not mandatory
- ✔ Can be from a programming or non-programming background

Application Process

The application process consists of three simple steps:

Submit an Application

Complete the application, including a brief statement of purpose explaining your interest and qualifications for the program.

Application Review

A panel of admissions counselors will review your application and statement of purpose to determine whether you qualify for acceptance.

Admission

An offer of admission will be made to qualified candidates. You can accept this offer by paying the program fee.

Talk to an Admissions Counselor

Our team of dedicated admissions counselors is prepared to address your questions or concerns about this No-Code AI & Machine Learning program.

- ✔ Answer your questions about the application process
- ✔ Discuss your financing options
- ✔ Provide insight into the curriculum, program outcomes, and more.
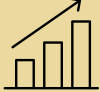
Inquire Now   Contact Us | 1-800-212-7688

Key Industry Trends

$225.91 bn

Expected global Machine Learning (ML) market size by 2030

Source: Fortune Business Insights

28.3%

The global no-code AI platform market's projected growth rate (CAGR) from 2023-2033

Source: Future Market Insights

$22.98 bn

Expected global no-code AI platform market size by 2029

Source: Maximize Market Research

20 mn to 50 mn

Potential new jobs expected to be created by AI by 2030

Source: McKinsey & Company

Who is this Program Ideal for?

No-code AI platforms use visual drag-and-drop platforms to automatically build machine learning models without writing a single line of code. These platforms automate the process of data collection, data cleansing, model selection, model training, and model deployment.

No-code AI & ML democratizes the power of artificial intelligence and machine learning. It enables business users, domain experts, and non-technical professionals to apply machine learning techniques without relying on dedicated data science teams.

This program caters to diverse professionals who aspire to maintain a competitive edge in their respective fields by embracing AI & machine learning. Whether you aim to drive organizational change, lead strategic initiatives, or pioneer advancements in your industry, this course provides the insights and tools necessary to thrive in a rapidly evolving landscape. The program is suitable for professionals seeking a competitive edge by staying ahead of the technology curve, such as:

- AI Enthusiasts
- Data Professionals
- IT Professionals
- Business Leaders
- Product Managers

- Program Managers
- Consultants
- Entrepreneurs
- Aspiring Data Scientists
- Aspiring ML Engineers
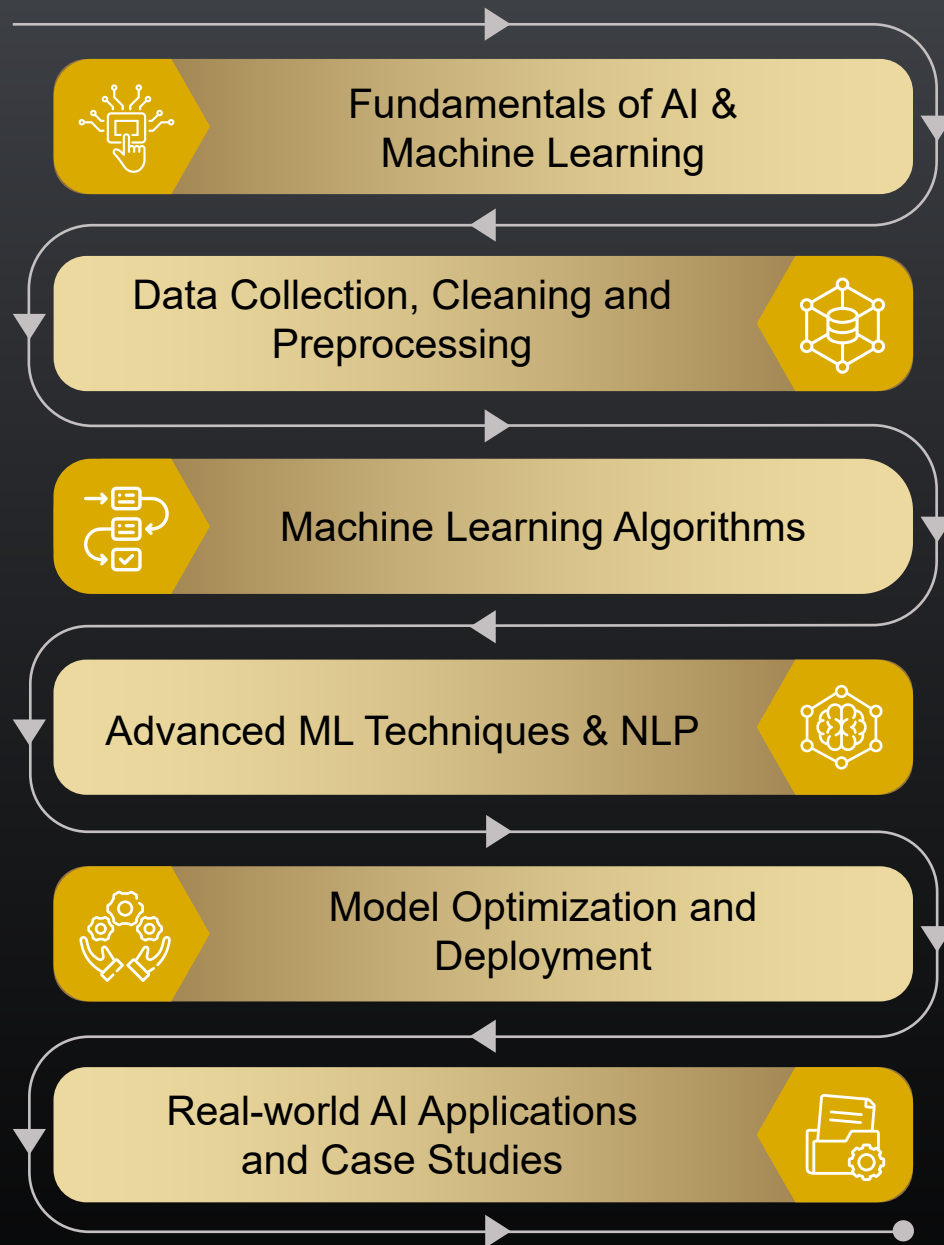
Program Outcomes

The **No Code AI and Machine Learning Specialization** will empower learners to:

- ☑ **Master AI and Machine Learning** concepts and terminologies, including data, features, models, algorithms, training, testing, and evaluation.

- ☑ **Leverage no-code AI platforms** like DataRobot, Dataiku, and Amazon SageMaker Canvas to build robust ML pipelines.

- ☑ **Select the optimal machine learning technique** and model tailored to your problem statement, be it classification, regression, or sentiment analysis.

- ☑ **Train, evaluate, and deploy** no-code ML models, interpreting and enhancing outcomes based on key metrics.

- ☑ **Implement no-code AI** in real-world scenarios such as customer feedback analysis, churn prediction, demand forecasting, and image recognition.

Learning Path

Core Courses:

Fundamentals of AI & Machine Learning

Data Collection, Cleaning and Preprocessing

Machine Learning Algorithms

Advanced ML Techniques & NLP

Model Optimization and Deployment

Real-world AI Applications and Case Studies

Electives:

Essentials of Generative AI, Prompt Engineering and ChatGPT

Fundamentals of AI & Machine Learning

Discover the power of artificial intelligence and machine learning with this introductory course on the fundamentals of artificial intelligence and machine learning. Learn about the different types of machine learning algorithms, the machine learning life cycle, and the challenges that come with it. Get introduced to no-code AI & machine learning tools and platforms, and understand the importance of MLOps in scaling machine learning models. Gain essential knowledge and skills to apply machine learning techniques to real-world problems and learn when to use no-code tools versus when to code.

Learning Outcomes

- Understand the fundamentals of AI & machine learning, including the difference between AI, machine learning, and deep learning and its importance in various industries.

- Learn about the machine learning life cycle, from problem definition and data collection to model selection, training, validation, deployment, monitoring, and maintenance.

- Explore machine learning challenges such as dealing with imbalanced data, ensuring model interpretability, and ethical considerations in machine learning.

- Gain an overview of no-code AI & machine learning tools and platforms and how they can be utilized for data importing and preparation, building and training models, and deploying and managing machine learning models.

- Understand the concepts of MLOps, its role in the machine learning lifecycle, and its importance in scaling machine learning models.

- Learn about the advantages and limitations of no-code AI and when to use no-code tools versus when to code.

Data Collection, Cleaning and Preprocessing

This course enables you to gain hands-on experience in collecting, cleaning, and preparing data for analysis. Learn about various data sources, data formats, and data acquisition techniques. Explore no-code platforms for data collection, import, and preprocessing, and discover advanced techniques for data cleaning and exploratory data analysis. Gain expertise in handling missing values, outliers, categorical data, text data preprocessing, and advanced feature engineering. Equip yourself with the skills to preprocess unstructured data and learn to integrate data for predictive modeling.

Learning Outcomes

☑ Understand different types of data sources, data formats, and data acquisition techniques

☑ Learn techniques for data collection without coding, including web scraping, APIs, IoT devices, and crowdsourcing

☑ Learn advanced data-cleaning techniques, including handling missing values, outliers, and categorical data

☑ Understand exploratory data analysis, including data visualization techniques without coding

☑ Gain knowledge in preprocessing and data integration for machine learning, including text data preprocessing, data integration strategies, and time-series data preprocessing

☑ Apply these concepts and techniques to real-world datasets and scenarios

☑ Develop a strong foundation in data handling, preprocessing, and analysis for machine learning applications

☑ Enhance skills in data quality assessment, ethical considerations in data collection, and data licensing and accessibility

☑ Acquire practical experience in data cleaning, exploratory data analysis, and preprocessing through hands-on projects and exercises

Machine Learning Algorithms

This course on Machine Learning Algorithms is designed to provide learners with a comprehensive understanding of various algorithms used in machine learning, including both supervised and unsupervised learning techniques. Learners will explore linear and polynomial regression, logistic regression, classification algorithms, clustering techniques, dimensionality reduction techniques, and anomaly detection. The course emphasizes the use of no-code tools for building models, clustering, dimensionality reduction, and anomaly detection, making it accessible and practical for learners of all backgrounds. Learners will also gain an understanding of evaluation metrics for regression and classification and how to use no-code tools to evaluate model performance. By the end of this course, learners will have a solid foundation in machine learning algorithms and be able to apply them to real-world problems.

Learning Outcomes

- Understand the differences between supervised and unsupervised learning, and their applications

- Learn linear and polynomial regression and how to use no-code tools for linear regression

- Understand logistic regression, decision trees, random forests, and K-nearest neighbors, and how to build classifiers using no-code tools

- Build classification and regression models without coding using no-code model building interfaces

- Learn clustering techniques such as K-Means and hierarchical clustering and how to use no-code tools for clustering

- Understand dimensionality reduction techniques such as PCA and t-SNE and how to use no-code tools for dimensionality reduction

- Learn anomaly detection and outlier analysis and how to use no-code tools for anomaly detection

- Understand evaluation metrics for regression, including MSE, MAE, RMSE, and R-square, and how to use no-code tools to evaluate regression

- Learn evaluation metrics for classification, including confusion matrix, accuracy, precision, recall, F1-score, and ROC-AUC, and how to use no-code tools to evaluate classification
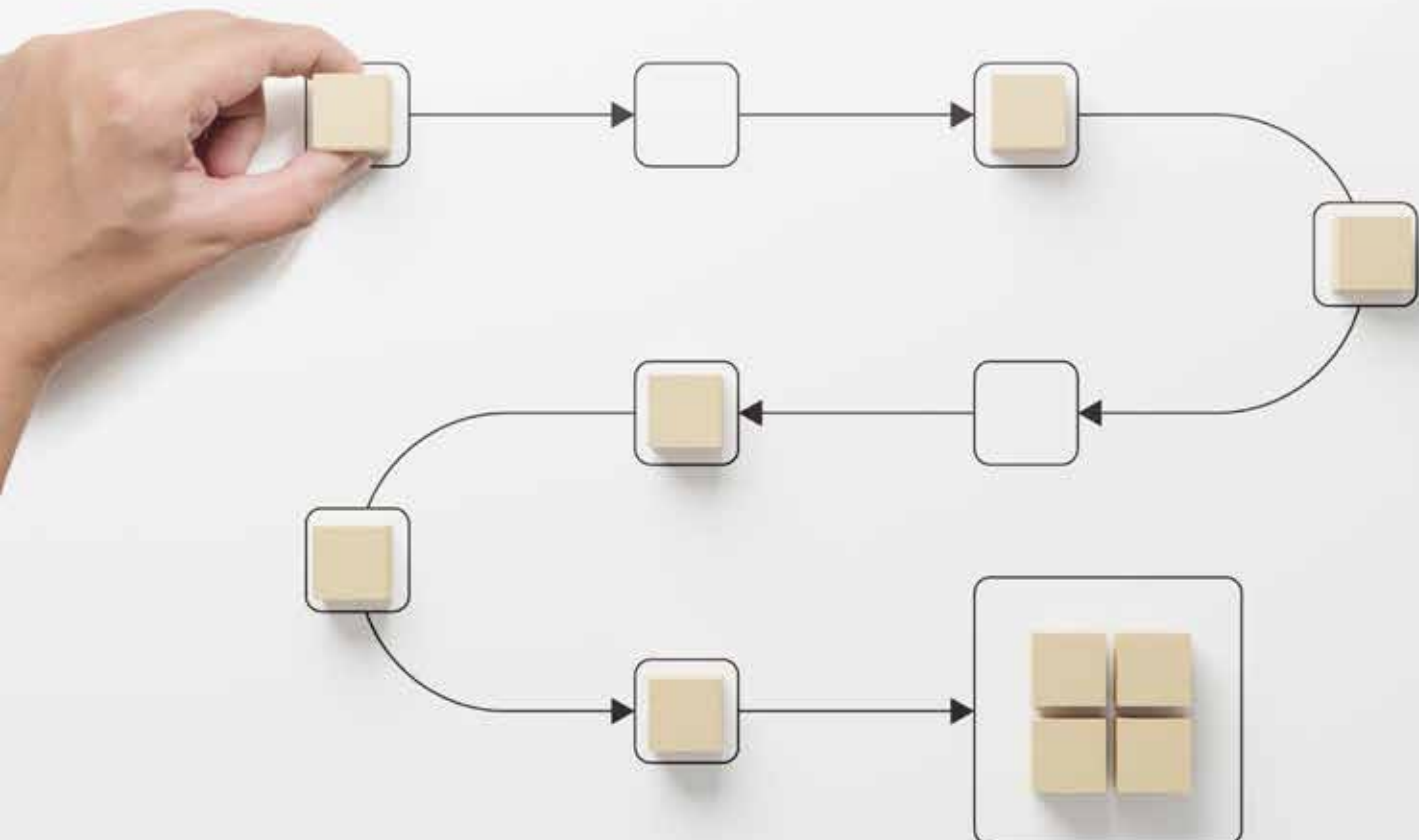
Advanced ML Techniques & NLP

This course covers advanced topics in AI & machine learning, including ensemble learning methods such as Bagging and Boosting and Gradient Boosting Machines like XGBoost and LightGBM. It also explores Support Vector Machines (SVM) for classification and regression. It introduces neural networks, including artificial neural networks (ANNs), convolutional neural networks (CNNs), ecurrent neural networks (RNNs), and long short-term memory (LSTM) networks. The course also covers attention mechanisms and transformer networks. It also delves into text analytics and natural language processing (NLP), including text processing, representation, sentiment analysis, building NLP models using no-code platforms, and vector embeddings. The course emphasizes the use of no-code tools and interfaces for building and training models, making it accessible and practical for learners of all backgrounds.

Learning Outcomes

- ✅ Understand and apply ensemble learning methods, including Bagging and Boosting and Gradient Boosting Machines like XGBoost and LightGBM

- ✅ Learn the concept of Support Vector Machines (SVM) and apply it to classification and regression problems

- ✅ Understand the basics of artificial neural networks (ANNs), including neurons, weights, bias, forward and backward propagation

- ✅ Build and train convolutional neural networks (CNNs) for image classification and object detection

- ✅ Build and train recurrent neural networks (RNNs) and long-short-term memory (LSTM) networks to process sequential data

- ✅ Understand the attention mechanism and apply it to transformer networks for machine translation and text summarization

- ✅ Understand the key concepts in text analytics and natural language processing (NLP), including text processing, representation, and sentiment analysis

- ✅ Apply no-code tools and interfaces to build and train machine learning models, including ensemble models, SVMs, and neural networks

Model Optimization and Deployment

This course covers model performance optimization, feature selection, model interpretability, and model deployment using no-code tools. Topics include cross-validation techniques, model selection strategies, bias-variance trade-offs, feature selection techniques, model interpretability and explainability, model deployment as APIs, integration with web and mobile applications, and model6 monitoring and management. The course emphasizes using no-code tools for model optimization, feature selection, and deployment, making it accessible to non-technical users. The course includes hands-on projects and real-world case studies and is designed to allow various industries to create solutions using intuitive, interactive user interfaces. The course covers tools such as DataRobot AI, KNIME, and Dataiku, which enable users to classify information, perform data analysis, and create accurate data predictions with models.

Learning Outcomes

- Optimize model performance using cross-validation techniques, including K-fold, stratified, and leave-one-out, and use no-code tools for cross-validation

- Using no-code tools, understand and apply model selection strategies, including hyperparameter tuning, grid search, randomized search, and Bayesian optimization

- Diagnose and address overfitting and underfitting, and apply regularization techniques to combat overfitting

- Apply feature selection techniques, including filter, wrapper, and embedded methods, using no-code tools

- Understand and apply model interpretability and explainability techniques, including global and local interpretability, LIME, SHAP, and feature importance

- Deploy models as APIs and integrate them into web and mobile applications using no-code platforms

- Monitor and manage models over time, addressing concept drift and data distribution shifts, and retrain models in no-code environments

Real-world AI Applications and Case Studies

Explore real-world applications and case studies of no-code AI & machine learning in various industries, including finance, healthcare, and marketing. Learn from case studies on predictive analytics, image recognition, and more. Discover best practices, lessons learned, and ethical considerations in no-code machine learning deployment. Unlock the power of no-code AI and machine learning tools to make data-driven business decisions and build intelligent solutions without writing code.

Learning Outcomes

- Understand the applications of no-code AI & machine learning in various industries, including finance, healthcare, and marketing

- Learn from real-world case studies on predictive analytics, image recognition, and more

- Identify common challenges of no-code AI & machine learning and best practices for project success

- Explore ethical considerations in no-code machine learning deployment

- Gain insights on the lessons learned from successful no-code AI & machine learning projects

- Develop a practical understanding of how to apply no-code AI & machine learning tools to solve real-world problems

Electives

Essentials of Generative AI, Prompt Engineering & ChatGPT

This course provides a comprehensive understanding of generative AI models focusing on ChatGPT. You will gain an understanding of the essentials of generative AI and its landscape, prompt engineering, explainable AI, conversational AI, ChatGPT, and other LLMs.

Learning Outcomes

☑ Understand the fundamentals of generative AI, including the working principles and various types of generative AI models

☑ Apply effective prompt engineering techniques to improve the performance and control the behavior of generative AI models

☑ Gain an understanding of ChatGPT, including its working mechanisms, notable features, and limitations

☑ Identify and explore diverse applications and use cases where ChatGPT can be leveraged

☑ Gain exposure to fine-tuning techniques to customize and optimize ChatGPT models

Skills Covered

- ☑ Data Collection and Acquisition
- ☑ Data Cleaning and Preparation
- ☑ Exploratory Data Analysis (EDA)
- ☑ Data Transformation Techniques
- ☑ Data Integration Techniques
- ☑ Supervised Learning Algorithms
- ☑ Unsupervised Learning Algorithms
- ☑ Techniques for Model Evaluation
- ☑ Ensemble Learning Methods

- ☑ Support Vector Machines
- ☑ Artificial Neural Networks
- ☑ Text Analytics
- ☑ Natural Language Processing
- ☑ Model Performance Optimization
- ☑ Feature Selection
- ☑ Model Interpretability
- ☑ Generative AI
- ☑ Prompt Engineering

Tools Covered
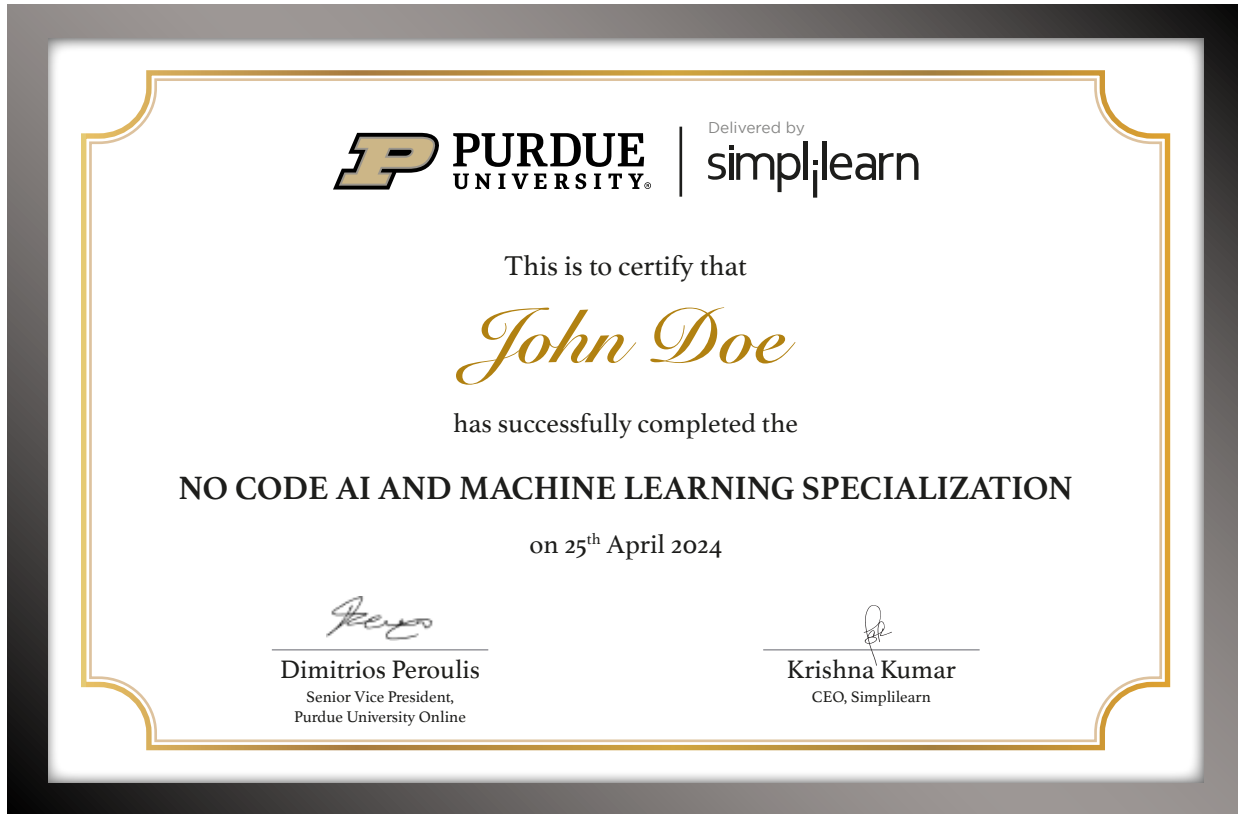
Amazon SageMaker Canvas

DataRobot

Vertex.ai

data iku

Open for Innovation
KNIME

rapidminer

University Certificate

PURDUE UNIVERSITY | Delivered by **simplilearn**

This is to certify that

John Doe

has successfully completed the

NO CODE AI AND MACHINE LEARNING SPECIALIZATION

on 25th April 2024

Dimitrios Peroulis
Senior Vice President,
Purdue University Online

Krishna Kumar
CEO, Simplilearn

Upon completing the **No Code AI and Machine Learning Specialization**, you will receive a program completion certificate from Purdue University Online and Simplilearn. You will also receive certificates from Simplilearn for the courses completed in the learning path. These certificates will testify to your skills as an expert data science and machine learning professional.

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