

Snowflake Advanced – Data Scientist

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Course Number: INNO-SNOW-DS

Duration: 3 days

Overview

Course Description

Data science has become an essential component of modern decision-making, and Snowflake’s innovative platform offers powerful capabilities for scaling and optimizing data-driven solutions. This course provides participants with a deep understanding of Snowflake’s architecture and tools, enabling them to prepare, model, and analyze data efficiently. Participants will learn to apply data science principles to real-world problems, using Snowflake’s seamless integration with popular frameworks such as Python, R, and machine learning platforms. By exploring topics like data preparation, feature engineering, and machine learning model deployment, the course equips learners to build reliable and scalable data pipelines. Practical exercises and case studies reinforce the theoretical concepts, ensuring a hands-on learning experience. In addition to mastering technical skills, this course prepares participants for the SnowPro Advanced: Data Scientist Certification. With a focus on exam strategies and practice questions, learners will build the confidence needed to excel in the certification process and advance their careers as data science professionals.

Skills Gained

By the end of this course, participants will be able to:

- Understand the architecture and key features of Snowflake for data science workflows.
- Perform data preparation and feature engineering using Snowflake's tools and SQL capabilities.
- Train, validate, and deploy machine learning models using Snowflake and external frameworks.
- Leverage Snowflake's integration with visualization tools to create impactful data presentations.
- Prepare effectively for the SnowPro Advanced: Data Scientist Certification through targeted review and practice.

Who Can Benefit

The audience for this course is data scientists and AI/ML engineers who use Snowflake in enterprise environments.

Audience

Course Details

Exam Overview

- Quick Introductions
- Discuss exam prerequisites, format, scoring, and passing requirements
- Review exam objectives and identify key areas to focus on
- Ensure participants have the necessary course materials

Overview of Data Science and Snowflake

Snowflake plays a pivotal role in enabling scalable, efficient, and secure data science workflows. This module introduces its architecture, key features, and how it supports advanced data science practices.

- Introduction to the SnowPro Advanced: Data Scientist Certification
- Snowflake's architecture and unique capabilities
- Overview of Snowflake's scalability and data sharing features
- Benefits of Snowflake for data scientists

Data Preparation and Feature Engineering

Data preparation is the first step toward actionable insights. This module explores how to clean, transform, and engineer features effectively using Snowflake tools.

- Data ingestion methods in Snowflake
- Cleaning and transforming data with Snowflake SQL
- Feature engineering techniques for machine learning

- Handling missing data and outliers in Snowflake

Advanced Data Modeling

Snowflake enables the creation of robust and reusable data models for machine learning applications. This module focuses on building pipelines and leveraging Snowflake's dynamic scaling capabilities.

- Designing reusable data models in Snowflake
- Managing data pipelines for machine learning workflows
- Using Snowflake's dynamic scaling for large datasets
- Practical examples of advanced data modeling

Training Machine Learning Models

Snowflake's integration with popular frameworks allows seamless model training. This module dives into tools and techniques for building machine learning models directly in Snowflake.

- Introduction to machine learning frameworks in Snowflake
- Building models using Snowflake SQL and external libraries
- Integrating Python, R, and other languages with Snowflake
- Hands-on: Training regression models in Snowflake

Model Validation and Deployment

Deploying reliable machine learning models requires robust validation techniques. This module covers performance evaluation and best practices for deploying models in production.

- Cross-validation techniques and hyperparameter tuning
- Evaluating model performance in Snowflake
- Best practices for deploying production-ready models
- Hands-on: Validating and deploying a classification model

Advanced Machine Learning Use Cases

Explore the real-world applications of Snowflake in machine learning projects. This module provides case studies and practical exercises to reinforce advanced concepts.

- Predictive analytics in Snowflake
- Personalization use cases with Snowflake
- Building end-to-end machine learning pipelines
- Hands-on exercises with real-world datasets

Data Visualization for Business Insights

Data visualization bridges the gap between technical data and actionable business insights. This module explores visualization principles and tools integrated with Snowflake.

- Principles of effective data visualization
- Integrating Snowflake with Tableau, Power BI, and other tools
- Building dashboards for model explainability
- Hands-on: Creating visual reports from Snowflake data

Model Lifecycle Management

Maintaining the accuracy and relevance of machine learning models requires effective lifecycle management. This module covers monitoring, automation, and retraining practices.

- Monitoring models in production
- Automating workflows with Snowflake and external tools
- Retraining models for improved performance
- Hands-on: Implementing lifecycle management in Snowflake

Certification Preparation and Practice

Preparing for the SnowPro Advanced: Data Scientist Certification requires thorough review and practice. This module focuses on exam strategies, mock tests, and common pitfalls.

- Key topics and objectives of the certification
- Practice questions and exam strategies
- Common pitfalls and how to avoid them
- Mock exam and review session