
AWS
re:Invent
NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

AIM319

Build, manage, and scale ML development with a web-based visual interface

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Agenda

SageMaker Studio Overview

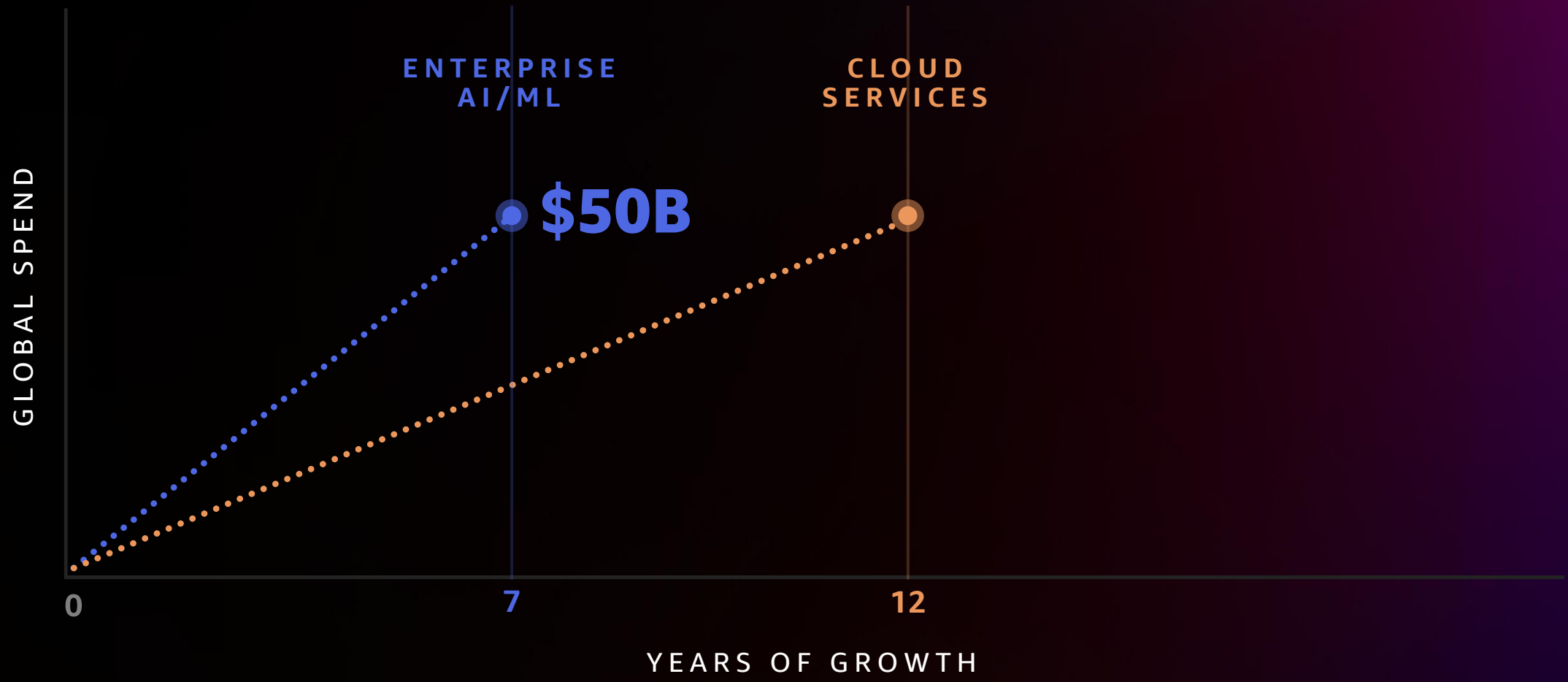
JPMorgan Chase SageMaker Studio journey

New SageMaker Studio features

Demo

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Machine learning is key to innovation



Source: IDC's Worldwide Semiannual Artificial Intelligence Spending Guide, Publication August 2021; IDC Semiannual Public Cloud Services Tracker, 1H2021, November 11 2021
Note: Enterprise AI/ML and Cloud Services (infrastructure and platform services) categories are not mutually exclusive.

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Challenges with machine learning

End-to-end machine learning is a long iterative process



CI/CD requires custom code



Difficult to scale the number of models in production



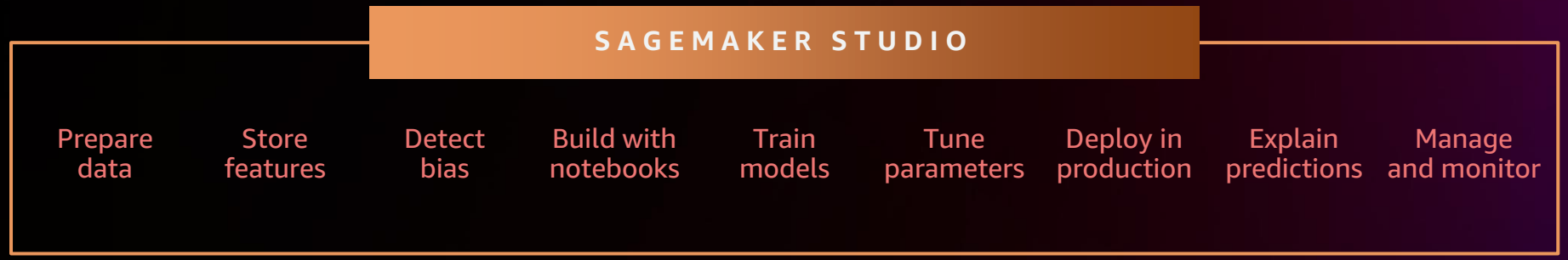
Compliance requirements are difficult to meet



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Amazon SageMaker Studio is the universal IDE for machine learning



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Data scientists, ML engineers, and data engineers can use SageMaker Studio



Data engineers

Prepare, analyze, visualize, and glean insights from data



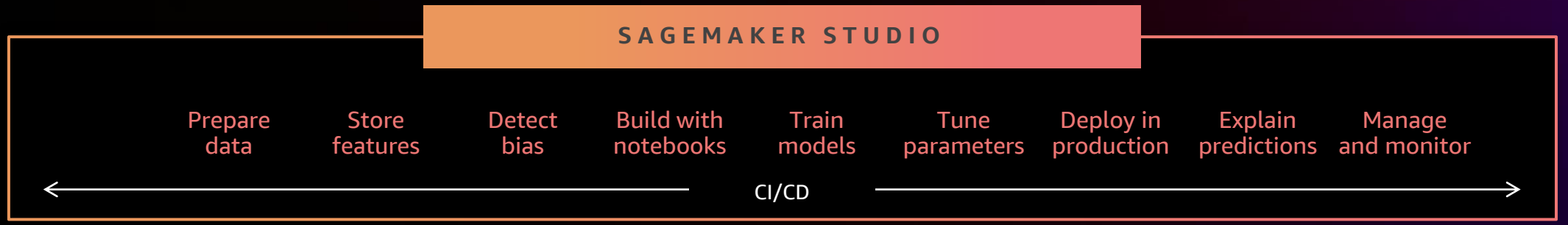
Data scientists and researchers

Build, tune, and train models



ML engineer

Deploy the best performing model, monitor performance and data governance



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Accelerate adoption of AI & ML in business processes with SageMaker Studio

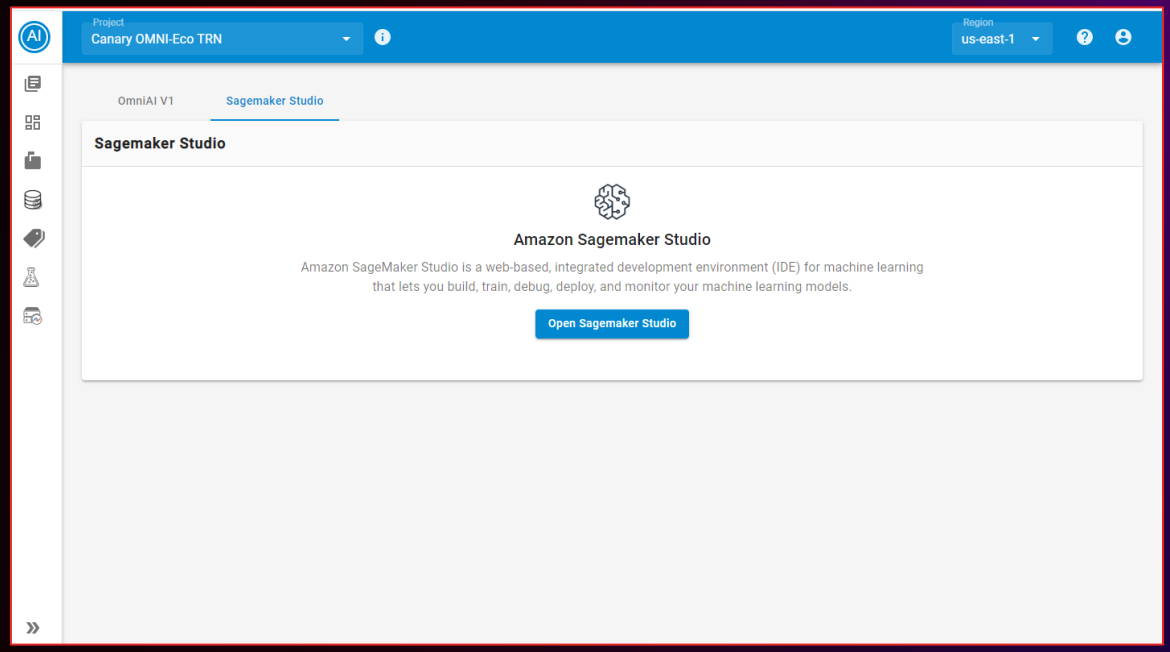
Peeyush Jain

Executive director, OmniAI Training Platform
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OmniAI

OmniAI is a fully managed platform service in JPMorgan Chase that enables Data Scientists and Machine Learning Engineers to quickly and easily build, train and deploy machine learning models at cloud scale



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How JPMorgan Chase enabled Studio

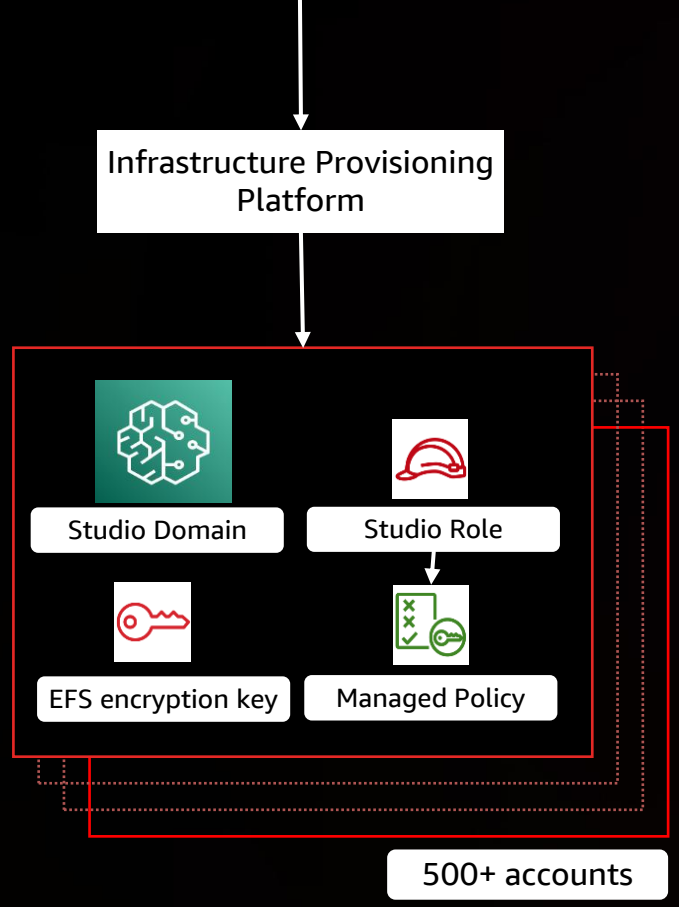
- Access
  - Use OmniAI UI – Training and Serving platform within JPMorgan Chase
  - Custom SDK
- Security
  - Validity of pre-signed URL (expiration, source IP)
  - VPC mode
  - EFS encryption
  - Disable download button
  - Egress control

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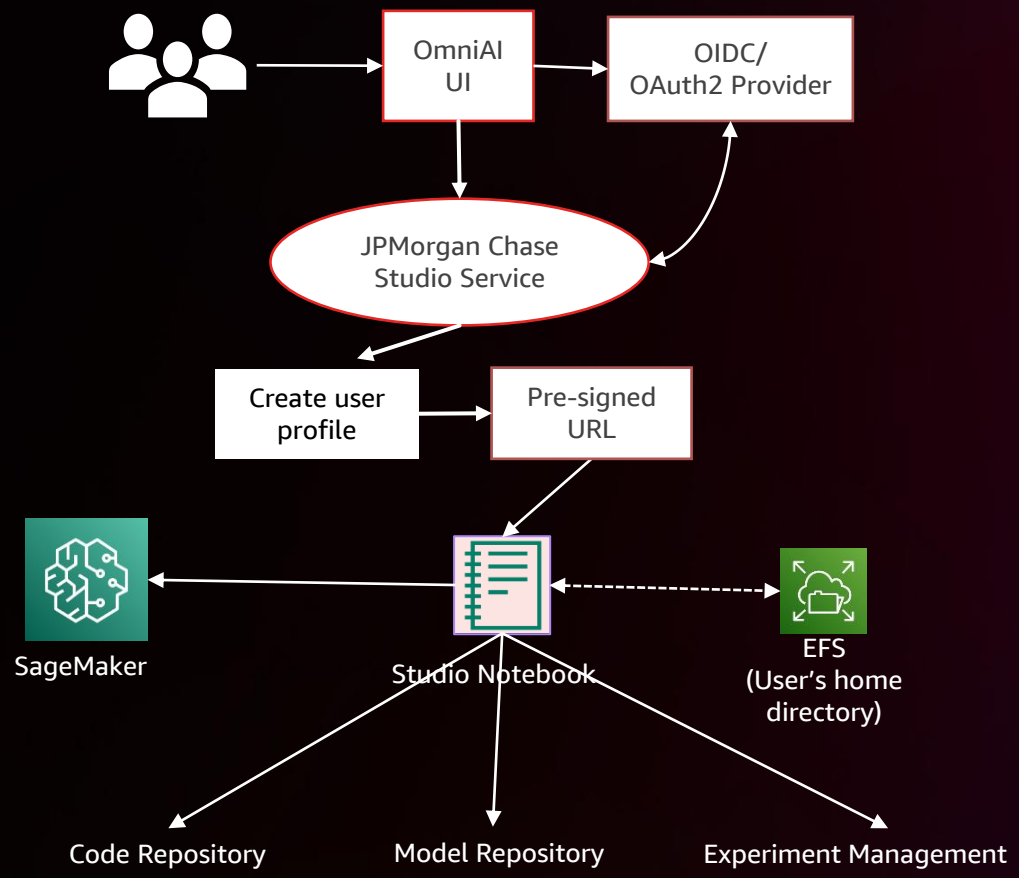
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Architecture and performance

Studio Setup



User Journey



Perf Testing

- Launched 100 notebooks in 7 mins
- 16 users created Jupyter and kernel apps every min
- Increased SageMaker limits
  - 300 User-Profiles per Domain
  - 1000 total concurrent apps per Domain

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SageMaker features enabled from Studio

- Data Wrangler
- PySpark processing jobs
- Feature store (self service)
- Autopilot
- Experiments
- Debugger and profiler
- Clarify
- Pipelines
- Model monitoring

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JPMorgan Chase – AWS partnership

- AWS provided the following:
  - Added features to enhance the security posture
  - Added features to improve data scientist productivity
  - Addressed issues in UI and Lifecycle Configuration in a timely manner

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Roadmap

- JupyterLab 3.0 migration
- VS Code Server integration
- Enable custom images for kernel apps
- Access Studio notebook via VPC endpoint

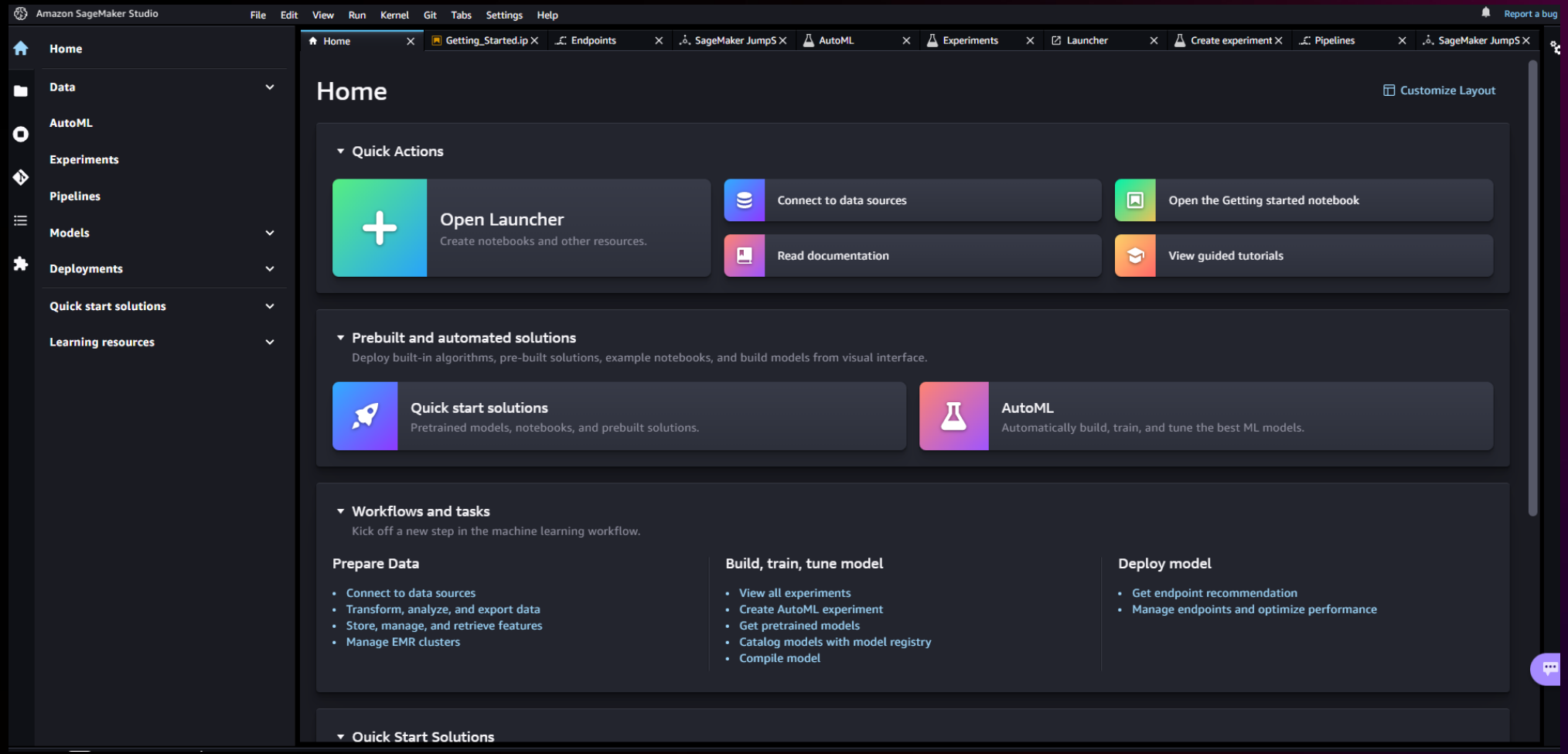
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What’s new in SageMaker Studio

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Studio UI refresh

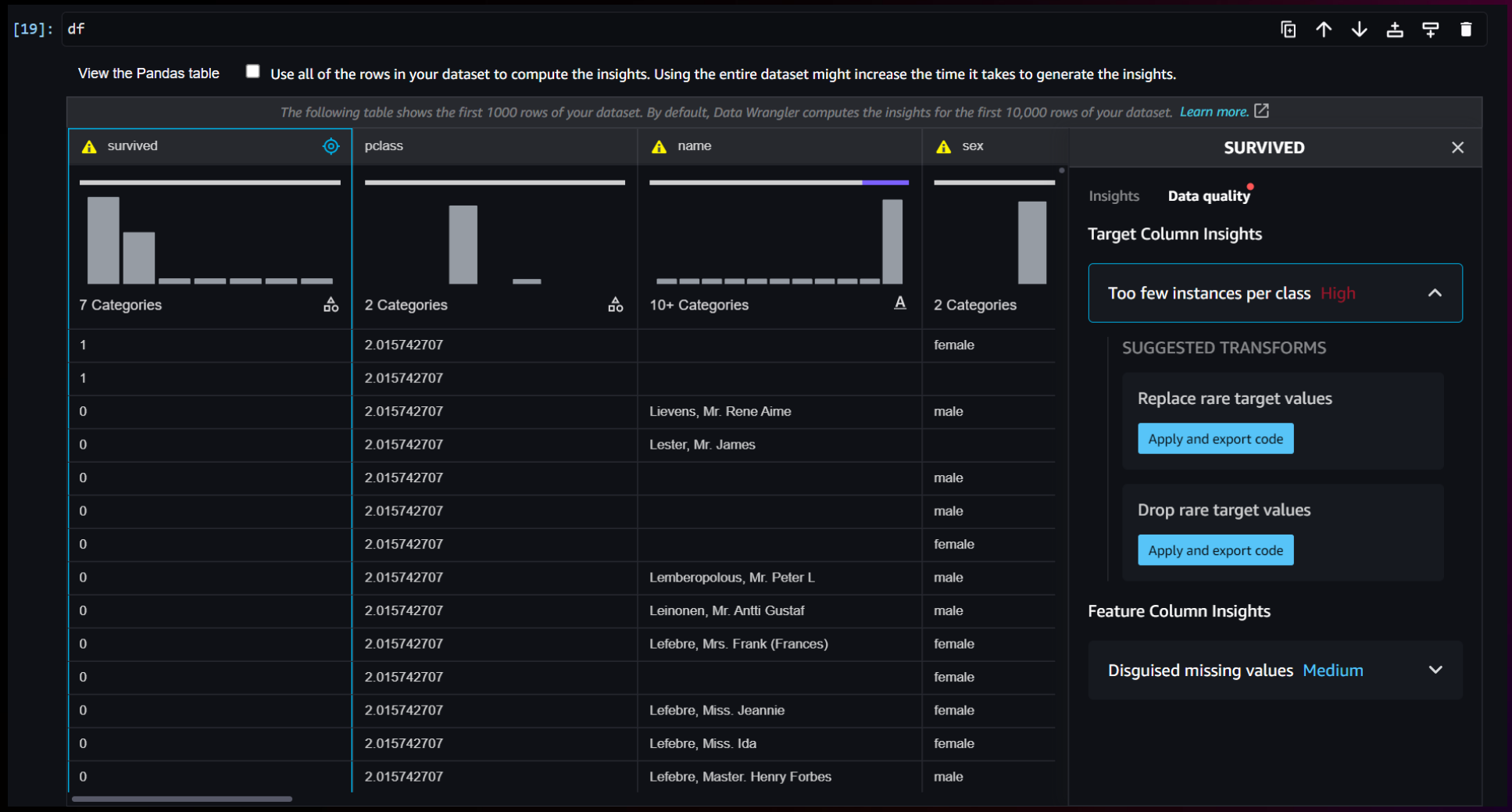
REDESIGNED UI IN SAGEMAKER STUDIO TO MAKE YOUR ML TEAMS MORE EFFICIENT AND PRODUCTIVE



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Simplified data preparation

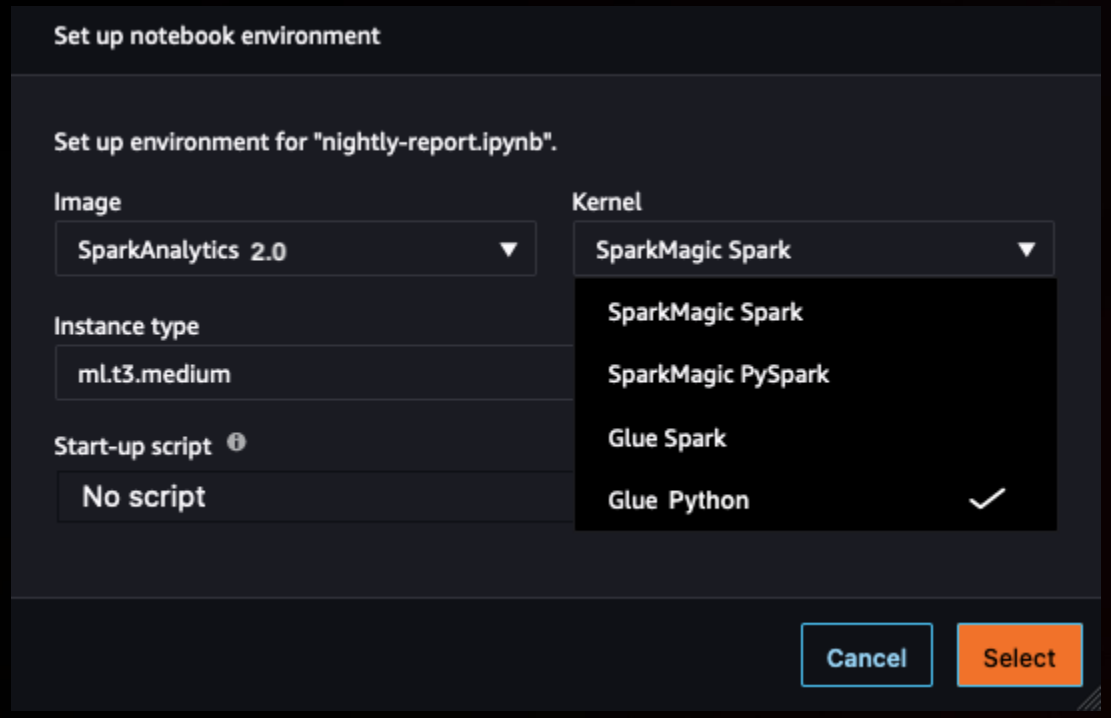
VISUALLY INSPECT AND ADDRESS DATA-QUALITY ISSUES IN A FEW CLICKS IN SAGEMAKER NOTEBOOKS

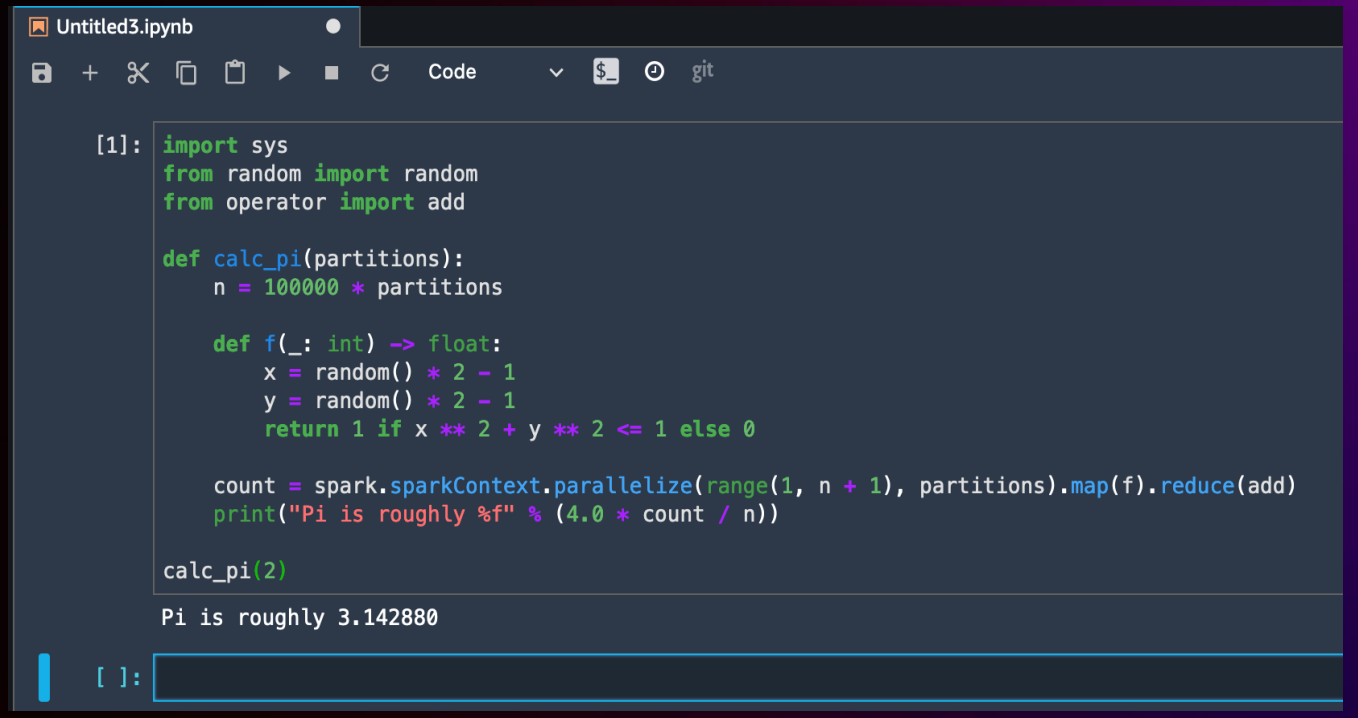


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Serverless data preparation

INTERACTIVELY PREPARE DATA AT SCALE USING SERVERLESS APACHE SPARK AND RAY IN SAGEMAKER STUDIO NOTEBOOKS

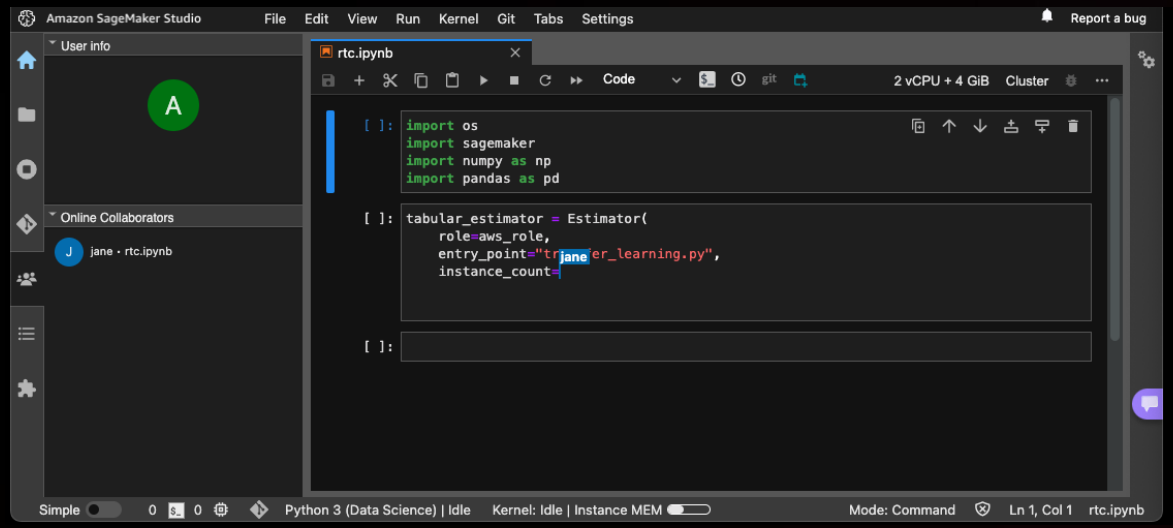


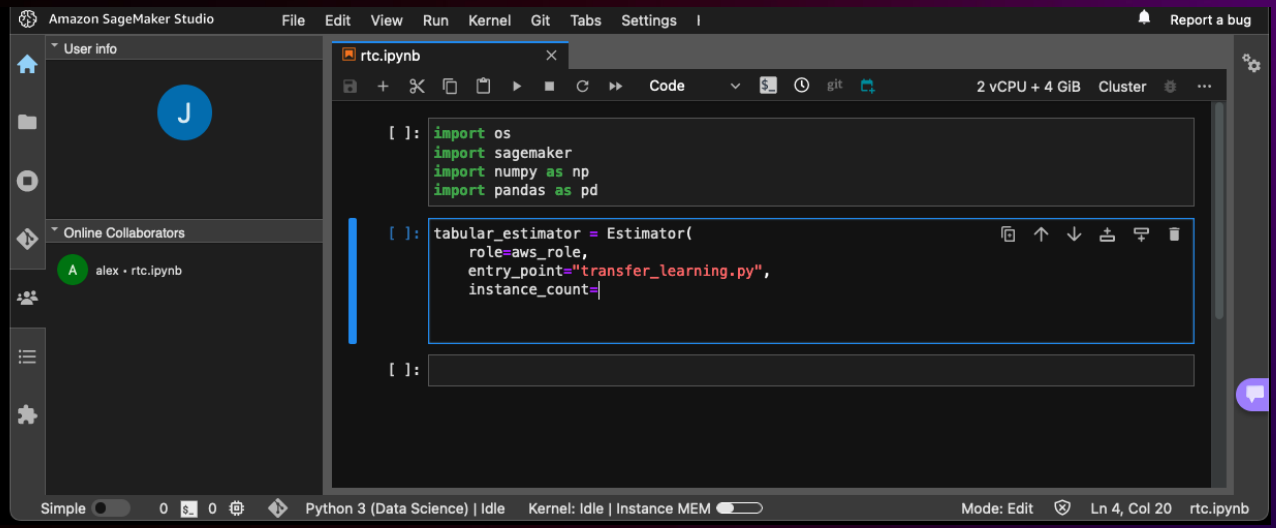


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Real-time collaboration

ACCELERATE COLLABORATION ACROSS DATA SCIENCE TEAMS USING SAGEMAKER NOTEBOOKS

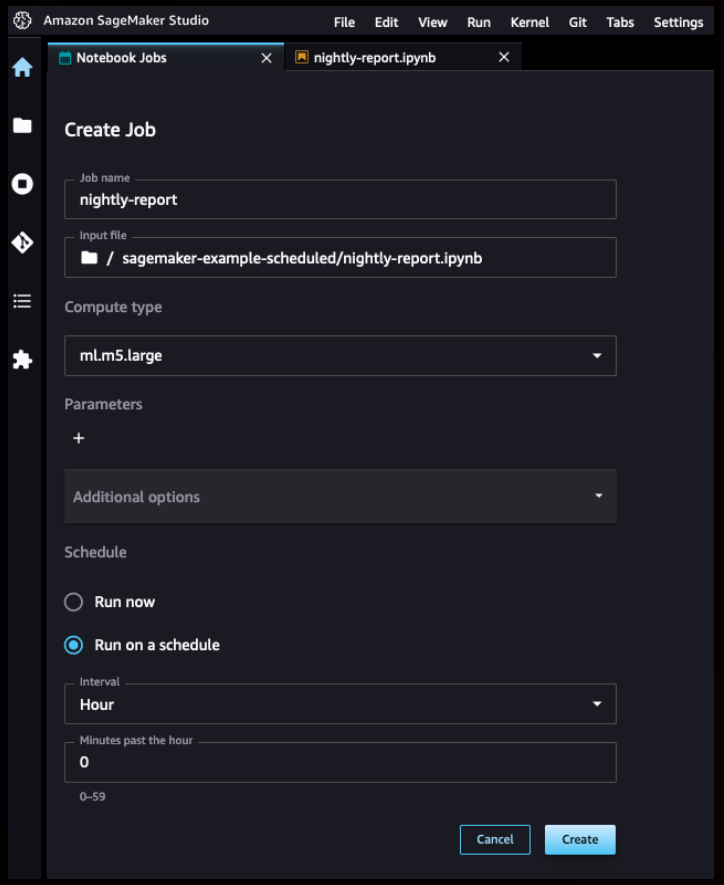


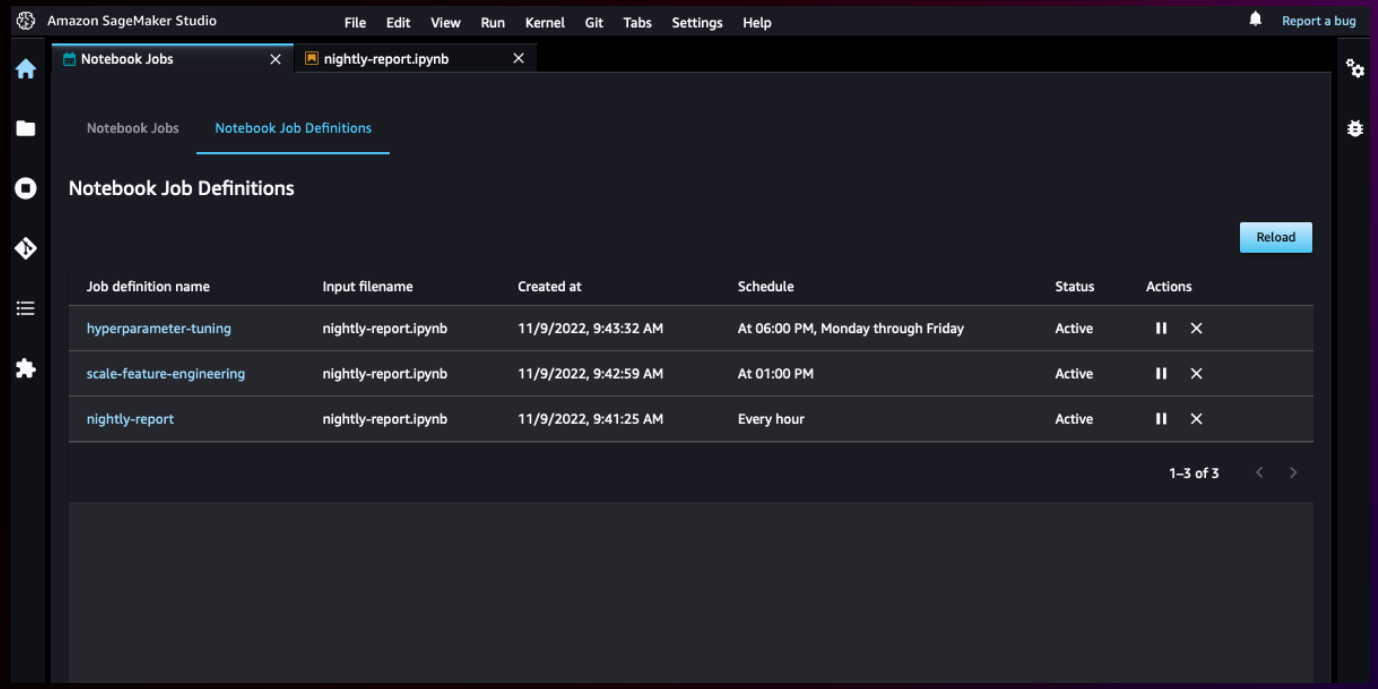


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Automatic conversion of notebook code to production-ready jobs

EXPEDITE MACHINE LEARNING DEVELOPMENT FROM EXPERIMENTATION TO PRODUCTION





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Demo: Customer churn use case





Current Service Provider

Customer unhappy



Looking to move to new carrier



Customer

Future Service Provider

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Recap and highlights

- SageMaker Studio is the universal IDE for machine learning
- Build, train, tune, and deploy your models from a single web-based interface
- Direct integration with EMR and Glue for scalable data prep
- Run large training jobs and deploy your models
- JP Morgan Chase securely scaled Studio to 100s of accounts & users
- Upcoming related sessions:
  - AIM 338
  - AIM 323
  - AIM 320
  - AIM 313

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Thank you!

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