Run Machine Learning Algorithms with Satellite Data

Use AWS Ground Station to ingest satellite imagery, and use Amazon SageMaker to label image data, train a machine learning model, and deploy inferences to customer applications.

1. Satellite sends data and imagery to the AWS Ground Station antenna.
2. AWS Ground Station delivers baseband or digitized RF-over-IP data to an Amazon EC2 instance.
3. The Amazon EC2 instance receives and processes the data, and then stores the data in an Amazon S3 bucket.
4. A Jupyter Notebook ingests data from the Amazon S3 bucket to prepare the data for training.
5. Amazon SageMaker Ground Truth labels the images.
6. The labeled images are stored in the Amazon S3 bucket.
7. The Jupyter Notebook hosts the training algorithm and code.
8. Amazon SageMaker runs the training algorithm on the data and trains the machine learning (ML) model.
9. Amazon SageMaker deploys the ML models to an endpoint.
10. The SageMaker ML model processes image data and stores the generated inferences and metadata in Amazon DynamoDB.
11. Image data received into Amazon S3 automatically triggers an AWS Lambda function to run machine learning services on the image data.
12. Applications interact with AWS Amplify to access the ML algorithm and database.