aws

API Reference

Amazon Augmented AI

API Version 2019-11-07

Amazon Augmented AI: API Reference

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Welcome

Amazon Augmented AI (Amazon A2I) adds the benefit of human judgment to any machine learning application. When an AI application can't evaluate data with a high degree of confidence, human reviewers can take over. This human review is called a human review workflow. To create and start a human review workflow, you need three resources: a *worker task template*, a *flow definition*, and a *human loop*.

For information about these resources and prerequisites for using Amazon A2I, see Get Started with Amazon Augmented AI in the Amazon SageMaker Developer Guide.

This API reference includes information about API actions and data types that you can use to interact with Amazon A2I programmatically. Use this guide to:

- Start a human loop with the `StartHumanLoop` operation when using Amazon A2I with a *custom task type*. To learn more about the difference between custom and built-in task types, see Use Task Types . To learn how to start a human loop using this API, see Create and Start a Human Loop for a Custom Task Type in the Amazon SageMaker Developer Guide.
- Manage your human loops. You can list all human loops that you have created, describe individual human loops, and stop and delete human loops. To learn more, see Monitor and Manage Your Human Loop in the Amazon SageMaker Developer Guide.

Amazon A2I integrates APIs from various AWS services to create and start human review workflows for those services. To learn how Amazon A2I uses these APIs, see Use APIs in Amazon A2I in the Amazon SageMaker Developer Guide.

This document was last published on July 1, 2024.

Actions

The following actions are supported:

- [DeleteHumanLoop](#)
- [DescribeHumanLoop](#)
- [ListHumanLoops](#)
- [StartHumanLoop](#)
- [StopHumanLoop](#)

DeleteHumanLoop

Deletes the specified human loop for a flow definition.

If the human loop was deleted, this operation will return a `ResourceNotFoundException`.

Request Syntax

```
DELETE /human-loops/HumanLoopName HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

HumanLoopName

  The name of the human loop that you want to delete.

  Length Constraints: Minimum length of 1. Maximum length of 63.

  Pattern: `^[a-z0-9](-*[a-z0-9])*$`

  Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Errors.

InternalServerException

We couldn't process your request because of an issue with the server. Try again later.

HTTP Status Code: 500

ResourceNotFoundException

We couldn't find the requested resource. Check that your resources exists and were created in the same AWS Region as your request, and try your request again.

HTTP Status Code: 404

ThrottlingException

You exceeded the maximum number of requests.

HTTP Status Code: 429

ValidationException

The request isn't valid. Check the syntax and try again.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

DescribeHumanLoop

Returns information about the specified human loop. If the human loop was deleted, this operation will return a `ResourceNotFoundException` error.

Request Syntax

```
GET /human-loops/HumanLoopName HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

HumanLoopName

    The name of the human loop that you want information about.

    Length Constraints: Minimum length of 1. Maximum length of 63.

    Pattern: `^[a-z0-9](-*[a-z0-9])*$`

    Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "CreationTime": number,
   "FailureCode": "string",
   "FailureReason": "string",
   "FlowDefinitionArn": "string",
   "HumanLoopArn": "string",
   "HumanLoopName": "string",
   "HumanLoopOutput": {
```

```
        "OutputS3Uri": "string"
    },
    "HumanLoopStatus": "string"
 }
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

CreationTime

The creation time when Amazon Augmented AI created the human loop.

Type: Timestamp

FailureCode

A failure code that identifies the type of failure.

Possible values: `ValidationError`, `Expired`, `InternalError`

Type: String

FailureReason

The reason why a human loop failed. The failure reason is returned when the status of the human loop is `Failed`.

Type: String

FlowDefinitionArn

The Amazon Resource Name (ARN) of the flow definition.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[a-z\-]*:sagemaker:[a-z0-9\-]*:[0-9]{12}:flow-definition/.*`

HumanLoopArn

The Amazon Resource Name (ARN) of the human loop.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[a-z\-]*:sagemaker:[a-z0-9\-]*:[0-9]{12}:human-loop/.*`

HumanLoopName

The name of the human loop. The name must be lowercase, unique within the Region in your account, and can have up to 63 characters. Valid characters: a-z, 0-9, and - (hyphen).

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `^[a-z0-9](-*[a-z0-9])*$`

HumanLoopOutput

An object that contains information about the output of the human loop.

Type: HumanLoopOutput object

HumanLoopStatus

The status of the human loop.

Type: String

Valid Values: `InProgress | Failed | Completed | Stopped | Stopping`

Errors

For information about the errors that are common to all actions, see Common Errors.

InternalServerException

We couldn't process your request because of an issue with the server. Try again later.

HTTP Status Code: 500

ResourceNotFoundException

We couldn't find the requested resource. Check that your resources exists and were created in the same AWS Region as your request, and try your request again.

HTTP Status Code: 404

ThrottlingException

You exceeded the maximum number of requests.

HTTP Status Code: 429

ValidationException

The request isn't valid. Check the syntax and try again.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

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- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListHumanLoops

Returns information about human loops, given the specified parameters. If a human loop was deleted, it will not be included.

Request Syntax

```
GET /human-loops?
CreationTimeAfter=CreationTimeAfter&CreationTimeBefore=CreationTimeBefore&FlowDefinitionArn=Flo
 HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

CreationTimeAfter

(Optional) The timestamp of the date when you want the human loops to begin in ISO 8601 format. For example, `2020-02-24`.

CreationTimeBefore

(Optional) The timestamp of the date before which you want the human loops to begin in ISO 8601 format. For example, `2020-02-24`.

FlowDefinitionArn

The Amazon Resource Name (ARN) of a flow definition.

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[a-z\-]*:sagemaker:[a-z0-9\-]*:[0-9]{12}:flow-definition/.*`

Required: Yes

MaxResults

The total number of items to return. If the total number of available items is more than the value specified in `MaxResults`, then a `NextToken` is returned in the output. You can use this token to display the next page of results.

Valid Range: Minimum value of 1. Maximum value of 100.

NextToken

A token to display the next page of results.

Length Constraints: Maximum length of 8192.

Pattern: `.*`

SortOrder

Optional. The order for displaying results. Valid values: `Ascending` and `Descending`.

Valid Values: `Ascending | Descending`

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
    "HumanLoopSummaries": [
        {
            "CreationTime": number,
            "FailureReason": "string",
            "FlowDefinitionArn": "string",
            "HumanLoopName": "string",
            "HumanLoopStatus": "string"
        }
    ],
    "NextToken": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

HumanLoopSummaries

An array of objects that contain information about the human loops.

Type: Array of HumanLoopSummary objects

NextToken

A token to display the next page of results.

Type: String

Length Constraints: Maximum length of 8192.

Pattern: . *

Errors

For information about the errors that are common to all actions, see Common Errors.

InternalServerException

We couldn't process your request because of an issue with the server. Try again later.

HTTP Status Code: 500

ResourceNotFoundException

We couldn't find the requested resource. Check that your resources exists and were created in the same AWS Region as your request, and try your request again.

HTTP Status Code: 404

ThrottlingException

You exceeded the maximum number of requests.

HTTP Status Code: 429

ValidationException

The request isn't valid. Check the syntax and try again.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
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- [AWS SDK for Ruby V3](#)

StartHumanLoop

Starts a human loop, provided that at least one activation condition is met.

Request Syntax

```
POST /human-loops HTTP/1.1
Content-type: application/json

{
   "DataAttributes": {
      "ContentClassifiers": [ "string" ]
   },
   "FlowDefinitionArn": "string",
   "HumanLoopInput": {
      "InputContent": "string"
   },
   "HumanLoopName": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

DataAttributes

Attributes of the specified data. Use `DataAttributes` to specify if your data is free of personally identifiable information and/or free of adult content.

Type: HumanLoopDataAttributes object

Required: No

FlowDefinitionArn

The Amazon Resource Name (ARN) of the flow definition associated with this human loop.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[a-z\-]*:sagemaker:[a-z0-9\-]*:[0-9]{12}:flow-definition/.*`

Required: Yes

HumanLoopInput

An object that contains information about the human loop.

Type: HumanLoopInput object

Required: Yes

HumanLoopName

The name of the human loop.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `^[a-z0-9](-*[a-z0-9])*$`

Required: Yes

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
    "HumanLoopArn": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

HumanLoopArn

The Amazon Resource Name (ARN) of the human loop.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[a-z\-]*:sagemaker:[a-z0-9\-]*:[0-9]{12}:human-loop/.*`

Errors

For information about the errors that are common to all actions, see [Common Errors](#).

ConflictException

Your request has the same name as another active human loop but has different input data. You cannot start two human loops with the same name and different input data.

HTTP Status Code: 409

InternalServerException

We couldn't process your request because of an issue with the server. Try again later.

HTTP Status Code: 500

ServiceQuotaExceededException

You exceeded your service quota. Service quotas, also referred to as limits, are the maximum number of service resources or operations for your AWS account. For a list of Amazon A2I service quotes, see [Amazon Augmented AI Service Quotes](#). Delete some resources or request an increase in your service quota. You can request a quota increase using Service Quotas or the AWS Support Center. To request an increase, see [AWS Service Quotas](#) in the *AWS General Reference*.

HTTP Status Code: 402

ThrottlingException

You exceeded the maximum number of requests.

HTTP Status Code: 429

ValidationException

The request isn't valid. Check the syntax and try again.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

StopHumanLoop

Stops the specified human loop.

Request Syntax

```
POST /human-loops/stop HTTP/1.1
Content-type: application/json

{
    "HumanLoopName": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

HumanLoopName

The name of the human loop that you want to stop.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: ^[a-z0-9](-*[a-z0-9])*$

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see Common Errors.

InternalServerException

We couldn't process your request because of an issue with the server. Try again later.

HTTP Status Code: 500

ResourceNotFoundException

We couldn't find the requested resource. Check that your resources exists and were created in the same AWS Region as your request, and try your request again.

HTTP Status Code: 404

ThrottlingException

You exceeded the maximum number of requests.

HTTP Status Code: 429

ValidationException

The request isn't valid. Check the syntax and try again.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface
- AWS SDK for .NET
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- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for PHP V3

- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

Data Types

The Amazon Augmented AI Runtime API contains several data types that various actions use. This section describes each data type in detail.

> **ⓘ Note**
>
> The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- HumanLoopDataAttributes
- HumanLoopInput
- HumanLoopOutput
- HumanLoopSummary

HumanLoopDataAttributes

Attributes of the data specified by the customer. Use these to describe the data to be labeled.

Contents

ContentClassifiers

Declares that your content is free of personally identifiable information or adult content.

Amazon SageMaker can restrict the Amazon Mechanical Turk workers who can view your task based on this information.

Type: Array of strings

Array Members: Maximum number of 256 items.

Valid Values: `FreeOfPersonallyIdentifiableInformation` | `FreeOfAdultContent`

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

HumanLoopInput

An object containing the human loop input in JSON format.

Contents

InputContent

   Serialized input from the human loop. The input must be a string representation of a file in JSON format.

   Type: String

   Length Constraints: Maximum length of 3145728.

   Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

HumanLoopOutput

Information about where the human output will be stored.

Contents

OutputS3Uri

   The location of the Amazon S3 object where Amazon Augmented AI stores your human loop output.

   Type: String

   Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

HumanLoopSummary

Summary information about the human loop.

Contents

CreationTime

When Amazon Augmented AI created the human loop.

Type: Timestamp

Required: No

FailureReason

The reason why the human loop failed. A failure reason is returned when the status of the human loop is `Failed`.

Type: String

Length Constraints: Maximum length of 1024.

Required: No

FlowDefinitionArn

The Amazon Resource Name (ARN) of the flow definition used to configure the human loop.

Type: String

Length Constraints: Maximum length of 1024.

Pattern: `arn:aws[a-z\-]*:sagemaker:[a-z0-9\-]*:[0-9]{12}:flow-definition/.*`

Required: No

HumanLoopName

The name of the human loop.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `^[a-z0-9](-*[a-z0-9])*$`

Required: No

HumanLoopStatus

The status of the human loop.

Type: String

Valid Values: `InProgress | Failed | Completed | Stopped | Stopping`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signing AWS API requests in the *IAM User Guide*.

Action

    The action to be performed.

    Type: string

    Required: Yes

Version

    The API version that the request is written for, expressed in the format YYYY-MM-DD.

    Type: string

    Required: Yes

X-Amz-Algorithm

    The hash algorithm that you used to create the request signature.

    Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

    Type: string

    Valid Values: `AWS4-HMAC-SHA256`

    Required: Conditional

X-Amz-Credential

    The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: *access_key*/*YYYYMMDD*/*region*/*service*/aws4_request.

For more information, see [Create a signed AWS API request](#) in the *IAM User Guide*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-Date

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'T'HHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: 20120325T120000Z.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see [Elements of an AWS API request signature](#) in the *IAM User Guide*.

Type: string

Required: Conditional

X-Amz-Security-Token

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS STS, see [AWS services that work with IAM](#) in the *IAM User Guide*.

Condition: If you're using temporary security credentials from AWS STS, you must include the security token.

Type: string

Required: Conditional

X-Amz-Signature

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-SignedHeaders

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see Create a signed AWS API request in the *IAM User Guide*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

Common Errors

This section lists the errors common to the API actions of all AWS services. For errors specific to an API action for this service, see the topic for that API action.

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 403

ExpiredTokenException

The security token included in the request is expired

HTTP Status Code: 403

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 403

InternalFailure

The request processing has failed because of an unknown error, exception or failure.

HTTP Status Code: 500

MalformedHttpRequestException

Problems with the request at the HTTP level, e.g. we can't decompress the body according to the decompression algorithm specified by the content-encoding.

HTTP Status Code: 400

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 401

OptInRequired

The AWS access key ID needs a subscription for the service.

HTTP Status Code: 403

RequestAbortedException

Convenient exception that can be used when a request is aborted before a reply is sent back (e.g. client closed connection).

HTTP Status Code: 400

RequestEntityTooLargeException

Problems with the request at the HTTP level. The request entity is too large.

HTTP Status Code: 413

RequestExpired

The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future.

HTTP Status Code: 400

RequestTimeoutException

Problems with the request at the HTTP level. Reading the Request timed out.

HTTP Status Code: 408

ServiceUnavailable

The request has failed due to a temporary failure of the server.

HTTP Status Code: 503

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

UnrecognizedClientException

The X.509 certificate or AWS access key ID provided does not exist in our records.

HTTP Status Code: 403

UnknownOperationException

The action or operation requested is invalid. Verify that the action is typed correctly.

HTTP Status Code: 404

ValidationError

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400