

Amazon Mechanical Turk

Overview

Amazon Mechanical Turk (MTurk) as defined by themselves "is a crowdsourcing marketplace that makes it easier for individuals and businesses to outsource their processes and jobs to a distributed workforce who can perform these tasks virtually". This could include anything from conducting simple data validation and research to more subjective tasks like survey participation, content moderation, and more. MTurk enables companies to harness the collective intelligence, skills, and insights from a global workforce to streamline business processes, augment data collection and analysis, and accelerate machine learning development.

Terminology

Requesters

A requester creates tasks on Mechanical Turk for workers to work on. Requesters can use the Requester User Interface (RUI) to create tasks, check the status of tasks, and accept or reject work performed on tasks.

Human Intelligence Tasks (HITs)

A Human Intelligence Task (HIT) is a single, self-contained task a requester creates on Mechanical Turk, for example, "Identify the color of the car in the photo."

Assignment

You can assign many Workers to work on the same HIT, which is a useful way of getting consensus on a subject by many workers giving the same answer. A worker can only accept a HIT once and can only submit one assignment per HIT. This guarantees that multiple workers must complete a HIT that has multiple assignments.

If a worker fails to complete an assignment before the time frame specified (i.e., the worker abandons the HIT), or if the worker chooses not to complete it after accepting it (i.e., the worker returns the HIT), the assignment becomes available for other workers to work on.

Workers

A worker is a person who completes assignments. Workers use the Mechanical Turk website to find assignments to work on, submit responses, and manage their account. Master workers are

workers who have demonstrated the ability to provide successful results for specific types of tasks across multiple requesters on the Mechanical Turk Marketplace.

Setting up a new MTurk project

Choose template

Amazon MTurk provides a set of templates for various labeling/evaluation tasks that are widely used in crowdsourcing. For our use case of evaluating explanations for product search, the image classification template was used and the layout was modified as specified in the next section.

Select a customizable template to start a new project

Survey Link Instructions (Click to expand)

Survey link:

Provide the survey code here:

You must ACCEPT the HIT before you can submit the results.

Create Project

Update settings

As seen in the below image, Amazon Mturk provides a way for us to specify how many workers we would need to work on this task, what would be the pay and time for the completion of the task. We could also specify a title, description and keywords for our task so that workers can find our task based on relevance.

Title

Which of the two explanations is more relevant to someone who search

Describe the task to Workers. Be as specific as possible, e.g. "answer a survey about movies", instead of "short survey", so Workers know what to expect.

Description

Given product and search results, which of the two explanations provided are more relevant to th

Give more detail about this task. This gives Workers a bit more information before they decide to view your task.

Keywords

search, relevance

Provide keywords that will help Workers search for your tasks.

Setting up your task

Reward per assignment

\$ 0.01

This is how much a Worker will be paid for completing an assignment. Consider how long it will take a Worker to complete each assignment.

Number of assignments per task

100

How many unique Workers do you want to work on each task?

Time allotted per assignment

30 Minutes

Maximum time a Worker has to work on a single task. Be generous so that Workers are not rushed.

Task expires in

60 Days

Maximum time your task will be available to Workers on Mechanical Turk.

Auto-approve and pay Workers in

3 Days

This is the amount of time you have to reject a Worker's assignment after they submit the assignment.

Design layout

The design layout section helps us design the User interface/ layout of our task. Amazon MTurk uses CrowdHTML for the layout. This layout designer works with all HTML syntaxes. There are additional MTurk specific templates that the requesters can find at (<https://docs.aws.amazon.com/sagemaker/latest/dg/sms-ui-template-reference.html>). Any CSS can be added to style the layout.

Since our tasks involve evaluating search result explanations, we create a layout like the below where the worker can choose which of the two explanations are more relevant to the search result. In order to provide context into the purchasing behavior of the particular user shown in this task, we provide the last 5 reviews written by the user. With this information, the workers can get an understanding of how relevant the explanations are for a particular user.

SubmitSubmit

From the above images, we see that we have product query, product title, description, image url and user views apart from two explanations. All this information would be fed to Mturk by using a CSV file. While designing the Mturk layout, we specify placeholder for these variable fields, which will be filled in with values from the CSV file. A sample CSV file has the following columns:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	User	query	product	explanation	previous_reviews	title	image	description										
2	A2CV33795J40H	home impro	B00002X29G	This product	1) perfect set of	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
3	A2CV33795J40H	home impro	B00002X29G	This product	1) perfect set of	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
4	A26H1Z03UQLFAD	home impro	B00002X29G	This product	1) avoid this battery	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
5	A26H1Z03UQLFAD	home impro	B00002X29G	This product	1) avoid this battery	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
6	A20NNP27JOW3OP	home impro	B00002X29G	This product	1) work for just what i	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
7	A20NNP27JOW3OP	home impro	B00002X29G	This product	1) work for just what i	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
8	A2RETTA258TE99	home impro	B00002X29G	This product	1) five stars work great	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
9	A2RETTA258TE99	home impro	B00002X29G	This product	1) five stars work great	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
10	A3QND5QJFA360M	home impro	B00002X29G	This product	1) very complete tool i	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
11	A3QND5QJFA360M	home impro	B00002X29G	This product	1) very complete tool i	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
12	A2IKMGJIVQ406A	home impro	B00002X29G	This product	1) love it i rate this	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
13	A2IKMGJIVQ406A	home impro	B00002X29G	This product	1) love it i rate this	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										
14	A3TB9HNR5483V	home impro	B00002X29G	This product	1) a nice set and a	Stanley 66-039 6-Piece J	https://img	['Swivel-head handles provide precision and reach', 'Hardened and tempered steel blades', 'Bright, plated shafts are fluted for a steady, solid grip',										

The CSV file will be fed in as batch input which we can publish through the Mturk UI as shown below. Hence, with the same project, we can publish multiple batches of task with multiple CSV files. Each row in the CSV file will be created as a HIT with the same layout as shown earlier.

Start a New Batch with an Existing Project

Project Name	Title	Created ▼	Last Edited	
Search Relevance	Which of the two explanations is more relevant to someone who searched for a given product?	September 11, 2019	December 4, 2019	<div>Publish Batch</div> <div>Edit</div> <div>Copy</div> <div>Delete</div>

Once the task has been published and workers have completed the HITs, the results can be exported through a CSV file which contains the HIT id, Worker ID, Approval rate of worker and the result chosen by each user.