

# Fair Work

Crowd Work Minimum Wage with One Line of Code

Try it → [fairwork.stanford.edu](https://fairwork.stanford.edu)

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**We hope you enjoyed Grant's demo last night**

**What are workers most frustrated about?**

# Crowd workers are often underpaid

**Platform based time reports are inaccurate**

Rzeszotarski and Kittur 2011

**Workers take steps to fix this, but it remains a pressing challenge**

Hara et al. 2018; Irani and Silberman 2013; Hanrahan et al. 2015

**How to  
Stop Silicon Valley  
from Building a  
New Global Underclass**

**GHOST**

Mary L. Gray and Siddharth Suri

**WORK**

**Many requesters want to pay  
fairly, but struggle to do so**

**Requesters have a hard time pricing accurately**  
Cheng, Teevan, and Bernstein 2015

**Could we make it easier  
to pay fairly?**

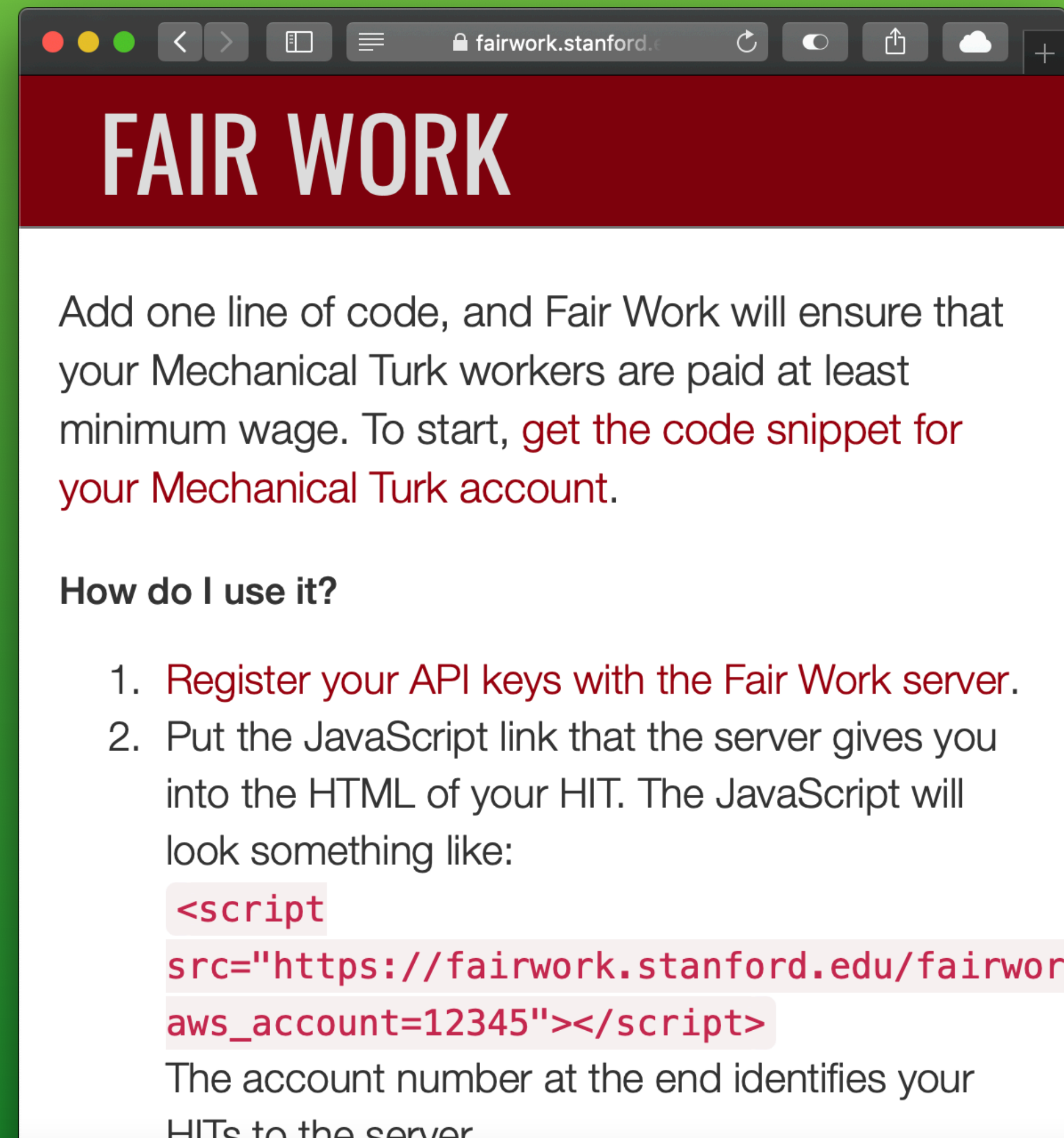
# We introduce **Fair Work**

1. **Add fairwork** to task [fairwork.stanford.edu](https://fairwork.stanford.edu)
2. **Workers report** duration
3. **Auto-bonus workers** to \$15/hour

# Fair Work provides a script

[fairwork.stanford.edu](https://fairwork.stanford.edu)

Also available for self hosting.



```
<script src="https://fairwork.stanford.edu/fairwork.js?aws_account=12345"></script>
```

asking the workers to self-report how long the task took them. Reports are then combined to estimate the

# Requesters add the script to their task

Fair Work works with tasks from the UI or from the SDK.

```
1 <!-- You must include this JavaScript file -->
2 <script src="https://assets.crowd.aws/crowd-html-elements.js"></script>
3
4 <script src="https://fairwork.stanford.edu/fairwork.js?aws_account=12345"></script>
5
6 <!-- For the full list of available Crowd HTML Elements and their input/output
7 documentation,
8 please refer to https://docs.aws.amazon.com/sagemaker/latest/dg/sms-ui-
9 template-reference.html -->
10 <!-- You must include crowd-form so that your task submits answers to MTurk -->
11 <crowd-form answer-format="flatten-objects">
12   <div>
13     <p>What is your favorite color for a bird?</p>
14     <crowd-input name="favoriteColor" placeholder="example: pink" required></crowd-
15     input>
16   </div>
17   <div>
18     <p>Check this box if you like birds</p>
19     <crowd-checkbox name="likeBirds" checked="true" required></crowd-checkbox>
20   </div>
21   <div>
22     <p>On a scale of 1-10, how much do you like birds?</p>
23     <crowd-slider name="howMuch" min="1" max="10" step="1" pin="true" required></
24
```

```
<script src="https://fairwork.stanford.edu/fairwork.js?aws_account=12345"></script>
```

```
28   <p>Write a short essay describing your favorite bird</p>
29   <crowd-text-area name="essay" rows="4" placeholder="Lorem ipsum..." required></
30   crowd-text-area>
31 </div>
32 </crowd-form>
```

- I think I got everything     I might have made a few errors
- This segment was difficult; there were probably several errors

**Submit**

---

**Get paid fairly:** This requester is using the [Fair Work script](#) to bring pay rates up to the minimum wage of \$15/hr. Fair Work does this by measuring completion times and then auto-bonusing workers to meet the desired hourly wage if needed.

Please report how much active work time this task took you, rounded to the nearest half minute. If you are far off from the median time report across all workers for this task, indicating a lack of good-faith estimation, you may be removed from Fair Work bonus eligibility. Bonuses are sent out daily. By participating, you acknowledge and consent to the [Fair Work IRB](#).

I agree to the IRB:

minutes (e.g., 1.5, 2, 60)

Estimated time: 0 minutes

**Workers see  
Fair Work in HIT**

**Workers see a description of the system and a one time informed consent form**

**Workers report the duration of the task**

# Requesters receive a summary email

Total payments and individual  
time reports are listed

Requesters have the option to  
freeze erroneous payments

Subject: **Fair Work: Mechanical Turk bonus pending**

From: **Fairwork**

To: **Requester**

You are using the Fair Work script to ensure pay rates reach a minimum wage of \$15.00/hr.

**The total bonus amount is \$13.26.** Bonuses will be sent in 12 hours. The tasks being bonused:

**HIT Type 38WH originally paid \$0.50 per task.**

Median estimated time across 28 workers was 0:02:30, for an estimated rate of \$12.00/hr.

→ Worker A1QVN: 3 reports, median duration 2:12.  
[Freeze this worker's payment](#)

→ Worker A1ZT3: 1 report, median duration 2:00.  
[Freeze this worker's payment](#)

# Workers are auto-bonused

The median reported task duration is used to calculate a bonus

Each worker who completed the task is bonused

Workers receive timely messages throughout the process

The **script tag** identifies the requester

```
<html>
Task
<script src=fairwork.url>
</html>
```

Fair Work  
Duration 13:00

The script **injects HTML** into the HIT

The total bonus is based on the **median reported** duration

Requesters include Fair Work script

Workers enter their work duration

```
To: Requester@email.com
Subject: Fair Work

Total: $13.68 bonus.
Tasks being bonused:
Worker D12: 01min freeze
Worker D24: 02min freeze
Worker D92: 13min freeze
```

Requesters review during grace period



Workers receive bonus to \$15/hour

A cron job **triggers emails and payments daily**

If requesters **freeze a report** it is not used

# Fair Work behind the scenes

**What is perceived as a fair wage?**

# **Why self report?**

**If fairness is the goal, we should also trust workers to be fair**

**Time based measures are notoriously unreliable**

# How much does Fair Work help?

Perhaps requesters are already doing a good job at pricing

# Experimental setup

- We recruited requesters to provide **19 previously used HITs**
- Requesters scaled their HIT prices to match a **goal of \$15/hr**
- We added Fair Work and ran the HITs at least 100 times each
- We measured how **requester prices compared with workers time report based pricing**

**Achieved desired wage of \$15/hour**



**Even requesters who are trying to price fairly  
are off by \$7.50 on average**

# Requesters know they aren't great at pricing

Participating requesters reflected that they often price based on their own completion times or on completion times of friends

# Does self reporting work?

Perhaps workers will not keep accurate records due to a focus on the work

# Experimental setup

- We added a timer script (TimeMe, Zissman) to check **actual duration on the task**
- We measured the **difference between workers' time reports and the timer script** across all tasks

# Workers' time reports are mostly accurate

This aligns with **behavioral economic results on truth telling** (Ariely, 2008)

This could also be interpreted as contributing to the **time costs of finding good work**

Potential **instrumentation errors**

# Considerations

The study reports on a **small number of HITs and a small number of workers**

The existence of a system like **Fair Work could influence workers and requesters**

→ Workers might **collude and systematically increase their reports**  
(Future work: longitudinal analysis)

→ Requesters might **abuse freezing reports**  
(Future work: Conflict resolution mechanism design)

Workers are concerned that a system like this **requires platform buy-in**

# Concluding

We contribute a mechanism that **trades off some guarantees to increase simplicity in fair pay**

We argue **one-off complex pricing mechanisms** are not needed to pay workers fairly

**Pay workers at least \$15/hour**

**Use Fair Work**

# Fair Work

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Stanford HCI Group

Thank you, and thanks to...

WORKERS OF



## FAIR WORK

Add one line of code, and Fair Work will ensure your Mechanical Turk workers are paid at least the minimum wage. To start, [get the code snippet](#) for your Mechanical Turk account.

### How do I use it?

1. [Register your API keys with the Fair Work](#)
2. Put the JavaScript link that the server gives you into the HTML of your HIT. The JavaScript link looks something like:

```
<script  
src="https://fairwork.stanford.edu/  
aws_account=12345"></script>
```

The account number at the end identifies your HITs to the server.

### How does it work?

Fair Work adds a question to the bottom of your HIT asking the workers to self-report how long they took them. Reports are then combined to estimate