AI-based Volunteer Engagement for Crowdsourcing Food Rescue Platforms

Food rescue platforms match edible food donations to low-resource communities to fight food insecurity, and rely on volunteers to do the delivery. Volunteer engagement is a main challenge in their operation. We develop and deploy a suite of algorithms to address the following three aspects of this challenge:
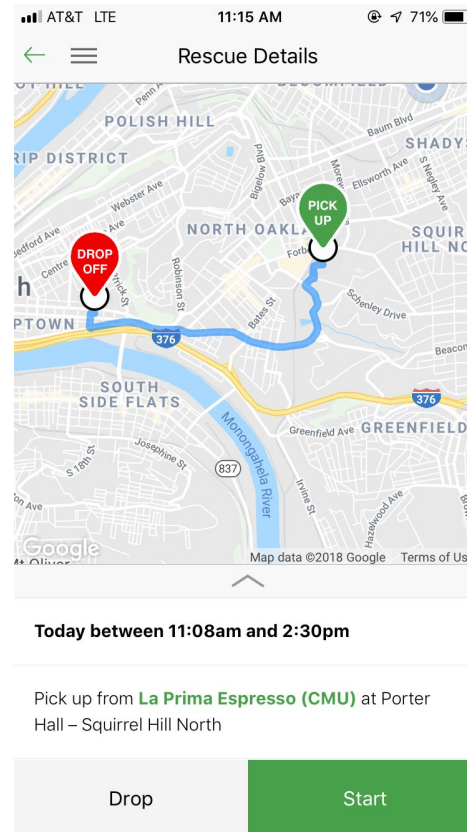
Who to engage?
A recommender system to advertise food rescue opportunities to the "right" volunteers [WWW-21]

How to engage?
A large language model-based pipeline to generate personalized message on task difficulty [WWW-24]

When to engage?
A bandit data-driven optimization algorithm for sequential volunteer engagement [AAAI-22]

In partnership with Food Rescue Hero, a network of food rescue platforms, we have deployed some initial findings of our research and ran a randomized controlled trial of our volunteer engagement algorithms. Our work is reaching over 45k volunteers and thousands of community organizations serving the food insecure populations.

More research and field trials are currently underway.
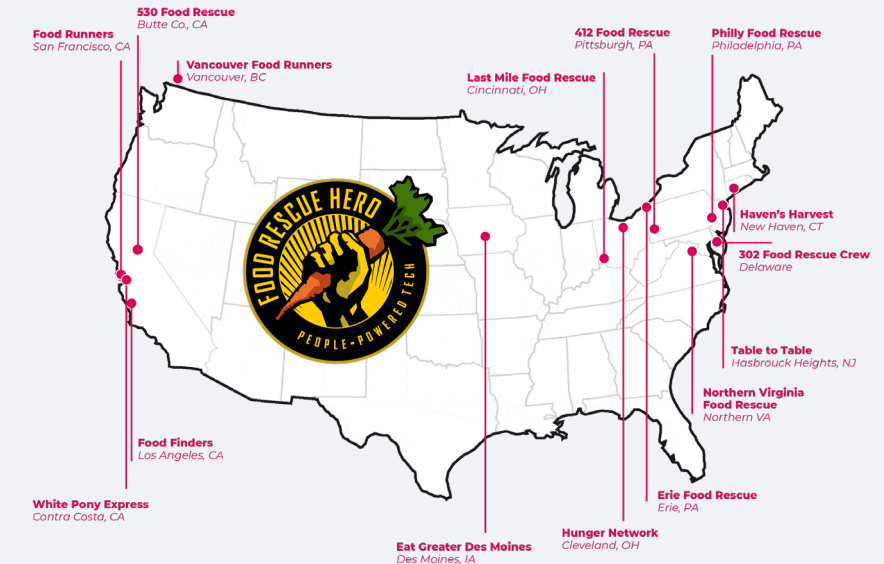
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