

**Revolutionizing Food Delivery Services with Home Cooked Meals**

(Technical Paper)

**Fluid Workers in the Gig Economy: Does a New Class of Employee Need a New Classification?**

(STS Paper)

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Technical Project Team Members

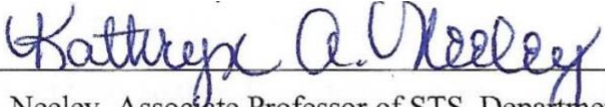
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On my honor as a University Student, I have neither given nor received unauthorized aid on this  
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## **Introduction**

The “gig economy”, a term that was popularized around the time of the 2008 financial crisis, is a rapidly growing system where temporary jobs are the norm. This new system has created a new bottom rung in America’s labor system, meaning that it is an easy first-step for unskilled workers to enter the workforce. A system that created a similar effect can be observed in India in the late 1800s when the dabbawala system was invented. It is a lunchbox delivery service that delivers home-cooked meals to hungry workers in India. This was especially important because it allowed for the employment of many uneducated, and often illiterate, workers in India (Roncaglia, 2013, pg.14). If such a stepping stone into the U.S. labor force were to disappear not only would millions of workers be without a job, but millions of potential workers will have a much more difficult time entering the labor market. There is currently a rising trend of self employed workers, set to triple to forty-two million in 2020, all of which will need to have the opportunity to acquire gig work (O’Connor, 2018).

Another demographic is also on the rise, single-person households. This demographic is far more work-oriented and time consciousness. The people who make up this demographic are mostly young-adults who are either students or workers. The increase of a time-starved, work-oriented, and health conscious demographic has also created a greater demand for individually packaged and convenient food. Consumers are currently demanding high quality and convenient food, so they do not have to worry and focus on more important tasks at hand (Cho, 2019, pg.109). My capstone team will develop a food delivery platform that allows the self employed workforce to cook their own meals and deliver them to consumers. The goal of this

platform is to meet the needs of consumers by providing them with convenient food that is of high quality and individually portioned. The platform also contributes to the gig economy by allowing for an alternative source of gigs for participating workers. The STS research will focus on analyzing the current actors participating in the gig economy system. As the demographic of the gig economy increases it is important to create a culture around it to maximize the productivity and happiness of the workers.

## **Revolutionizing Food Delivery Services with Home-Cooked Meals**

### **Introduction**

For our Capstone project, we are not working for a pre-existing organization but rather for our Professor who is acting as our client while we work on the HomeEats initiative. The HomeEats initiative is the default project pre-approved for our class.

### **System Design**

Our team will be developing a web application called HomeEats, which will serve as a food delivery service, similar to UberEats and Grubhub, but tailor made for home-cooked meals. HomeEats will allow consumers to finally have the ability to access fresh, home-cooked meals without having to go buy ingredients or prepare the dish themselves. Unlike other food delivery platforms, this convenience does not come at a sacrifice of food quality or fresh ingredients. To use the platform, consumers create an account on the site, enter their location and instantly view a large selection of dishes being cooked by amateur cooks in the area. They can view all the ingredients in the dish, the type of cuisine it originates from, estimated preparation time, and background on the chef, including reviews from previous customers. Once they select the dish they want, customers purchase the dish directly online, at which point the chef will be notified

that an order has been placed and begin cooking. Home chefs will be able to specify when they are online and available to cook, how many orders they can take at a time, and in the case of a bulk order being placed in advance, they will have a few hours to choose whether or not to accept the order.

This application will be built using primarily Django, which is a popular framework based in the Python programming language often used for web applications of this scale. Our application will also connect to a PostgreSQL Database which will store all the information on the site from cooks and customer user accounts to dishes, reviews, and purchases. In order for our team to simultaneously contribute to the project, all of our code will be hosted in Github, an online software development platform. The project will be completed over the course of the Fall and Spring semesters of the 2019-2020 school year through our CS Practicum class and our client is Ahmed Ibrahim, the course professor. This is not a project for an external company, it is an internal project not meant for profit.

Our team will meet with our client bi-weekly at the end of each sprint cycle. For our purpose, a sprint cycle is a two-week development period where each team member is tasked with a feature to implement or work on, which can be seen in Figure 1 below. The purpose of the sprint cycle is to allow for continuous planning, focused development, and short-term goals that the team can set and strive to reach. For example, a sample sprint goal may be implementing the customer landing page where they can browse through dishes. The following sprint goal may be adding filters to the dishes to allow for improved site navigation. These chronological short-term goals will lead up to the long-term goal of launching a fully functional site, allowing customers to order meals directly from cooks in their area, and give full administrative control to our client.

# HomeEats Development

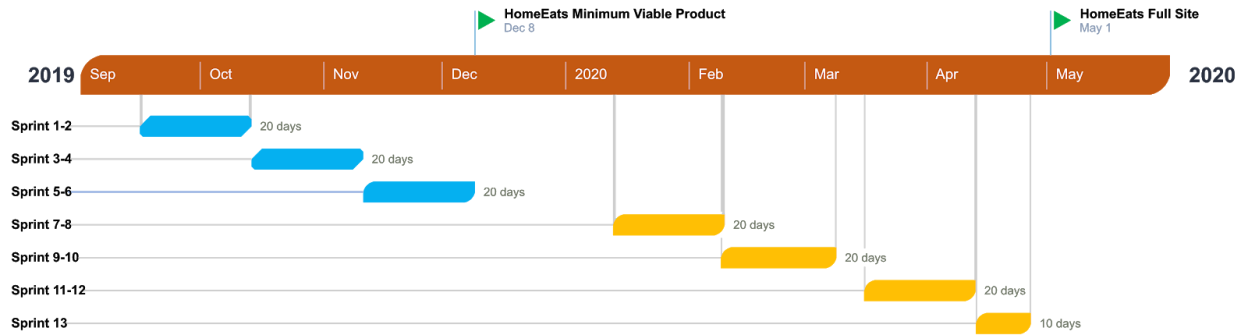


Figure 1: HomeEats Development Timeline (Created by Saboo, 2019)

HomeEats fits into the health and social dimensions of the food delivery app market by providing the same convenience and ease of use without sacrificing food quality.

## System Requirements

Gathering system requirements are very important because it provides a solid foundation for the system and gives the project team a clear roadmap of the development cycle and how to prioritize tasks based on time and importance. For our application there are three main user categories: the cook, the admin, and the customer. Below are our requirements split up by category as well as necessity.

## Minimum Requirements

*Admin Users.*

- As an admin, I want to approve any cook account before it is created, so that I can guarantee the customers a reliable experience
- As an admin, I want to make sure any updates to a cook's personal account information are reviewed, to maintain their accuracy
- As an admin, I want to be able to review reports and reviews, and potentially ban users or cooks, to keep the site safe from bad actors
- As an admin, I want to be able to view the orders that a cook has received.
- As an admin, I want to be able to view all accepted orders with total amount paid including amount going to the cook and HomeEats.
- As an admin, I want to be able to view cooks' cancelled order history with reasons.
- As an admin, I want to be able to set which reasons a cook can give for cancelling an order.
- As a system administrator I want to ensure that a payment option is selected prior to an order being processed, so that I can ensure meals are paid for before a cook begins to prepare the dish.

#### *Cook Users.*

- As a cook, I should be able to apply as a cook with my First Name, Last Name, Address, and Kitchen License
- As a cook, I should not be able to login to my account unless my application has been approved
- As a cook, I should be able to set what plates are available as soon as I log in, so that I can quickly get online and start receiving orders

- As a cook, I should be required to enter/edit my name, email, phone and address, so that I can be contacted in many ways
- As a cook, I should be able to add a new dish to my list of available dishes
- As a cook, I should be able to set a picture, ingredients, price, time to deliver, name, and type of food
- As a cook, I should be able to set which dishes I'm willing to make, so that I don't have to make dishes that I don't have their ingredients.
- As a cook, I should be able to report customers and their reviews, in order to protect my reputation from unfounded criticism and ban disrespectful or malicious customers
- As a cook, I should be able to make a separate account if I want to order through the site, so that I don't get confused between things I've ordered and things I have to cook
- As a cook, I should be able to set my own delivery range centered at my address, so that I am not pressured to deliver outside of my comfort zone
- As a cook, I should be able to tag food as vegan, allergy, etc. so that customers can choose foods which are suitable for them
- As a cook, I should be able to set a certain mileage I'm willing to travel so that I can have quick and efficient delivery service
- As a cook, I should be able to set a limit on how many meals I can make in a specified time frame, so that I don't get overbooked
- As a cook, I should be able to set when I am open and closed, so that customers can't attempt to order food from me when I am not available

- As a cook, I should be able to accept or reject meal orders so that I have control over what meals and how many meals I am making
- As a cook, I should be able to set an estimated cooking and delivery time, so that customers are aware of an approximate waiting time

*Customer/Diner Users.*

- As a customer, I should be able to see the ingredients in the dishes I plan to order
- As a customer, I should be able to see a picture of the dish I plan to order
- As a customer, I should be able to see the cost of the dish I plan to order
- As a customer, I should be able to see the estimated time of cooking for the dish I plan to order
- As a customer, I should be able to view the type of food I plan to order (e.g. Chinese, Thai, Indian, Mexican, etc.)
- As a customer I should be able to sort the dishes by price
- As a customer I should be able to sort the dishes by rating
- As a customer I should be able to only see dishes from cooks who can deliver to me
- As a customer I should be able to sort the dishes by the type of food I plan to order (e.g. Chinese, Thai, Indian, Mexican, etc.)
- As a customer I should be able to rate the food I purchase on a scale of 0-5 stars
- As a customer, I should be able to favorite a cook or a dish, so that I can easily find the cook or dish again
- As a customer, I should be able to review the dishes that I order, so that other customers are aware of the quality of that dish



- As a customer, I should be able to see a delivery status that indicates started cooking, on the way, and delivered so that I know when to expect my food
- As a customer, I should be able to set multiple addresses so that my food can be delivered to a location, even if I am not yet there
- As a customer, I should be able to see an average rating for each dish if the data is available
- As a customer, I should be able to cancel an order that has not started cooking yet so that I don't waste food and money if I change my mind
- As a customer I want to be able to tip the chef preparing my dish so that I can reward and encourage my favorite chefs.

### **Desired Requirements**

#### *Admin Users.*

- As an admin, I want to be able to view revenue reports that can be adjusted to a specific timeframe (week, month, quarter, semi-annual, annual, custom).
- As an admin, I want to be able to view cooks' online time and offline time per week.

#### *Cook Users.*

- As a cook, I should be able to set a limit on how many meals I can make in a specified time frame, so that I don't get overbooked

#### *Customer/Diner Users.*

- As a customer, I should be able to order at least 3 hours in advance

## Optional Requirements

*Customer/Diner Users.*

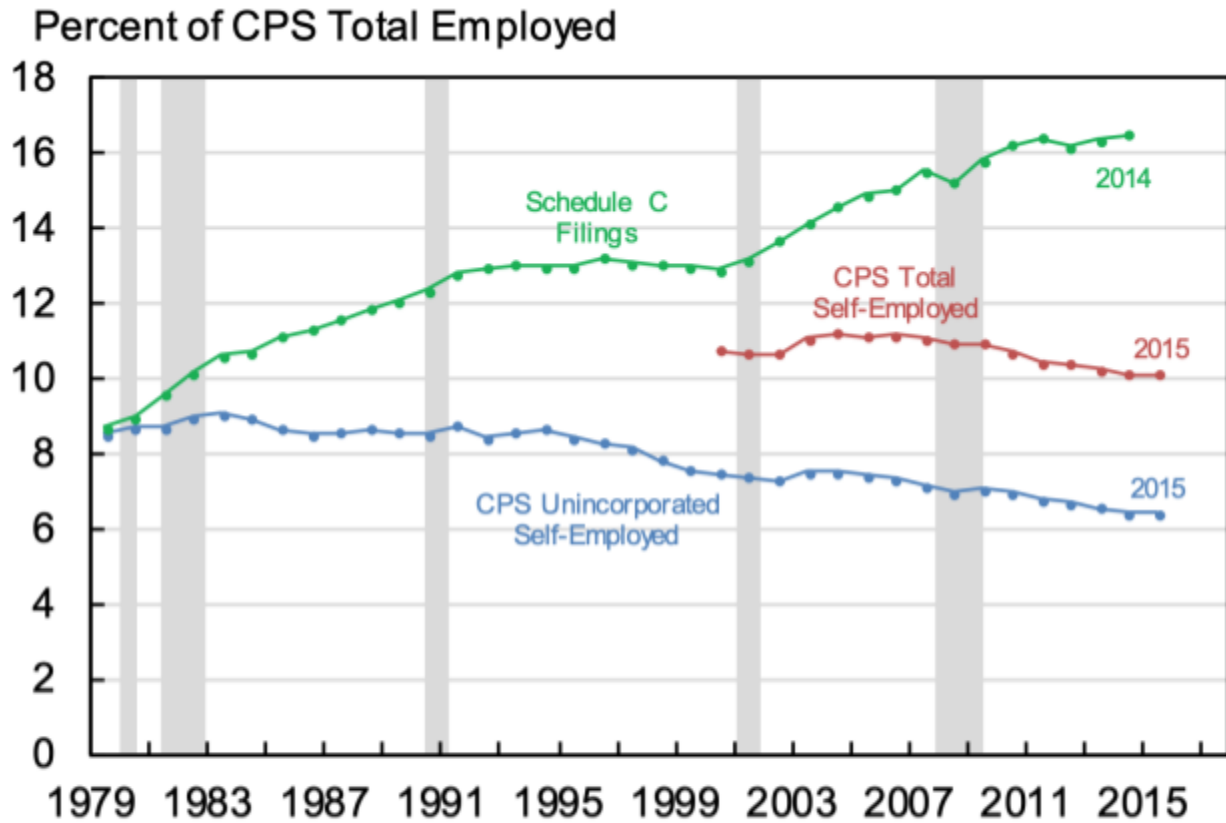
- As a customer, I want to be personal information to be anonymous when messaging the cook, so that my information is kept private
- As a customer I want to be able to message my cook to be able to customize the order to my liking.

### **STS Topic - The Growing Gig Economy: A Shift in the Mindset of Work**

The emergence of smartphone technology has disrupted the way that people live, work and spend money in the past decade. This new ability of constant connectivity has not only created new ways to perform transactions, but new types of transactions have been created. Instead of needing direct contact with a worker performing a service, one is in direct contact with a third-party service that assigns a worker to perform a service. A degree of freedom has been created between the customer and the worker, and it is shifting the way people view and perform work.

This shift in mindset is displayed in the significant rise, between 2005 and 2015, of alternative work arrangements, such as on-call workers, contract workers, help agency workers, and independent contractors. As shown in figure 1 below, the percentage of workers who engaged in alternative work arrangements in the U.S. economy was 10.7 percent of all U.S. workers in 2005 and 15.8 percent of all U.S. workers in 2015. The workers who engaged in services through online mediums, such as Uber or Lyft, accounted for 0.5 percent of all U.S.

workers in 2015 (Katz , 2016, pg.6).



**Figure 1:** The green line is displaying the percent of the current population survey that filed the Schedule C tax form; a form that is filed by self-employed taxpayers (Katz, 2016, pg. 41).

The reason for the shift may be attributed to the increase in technological services that allow alternative work arrangements or “gig workers” to thrive. However, it is more reasonable to state that the increase in technological services served as an opportunity for workers with this new mindset to thrive. The workers with this mindset looked to enter this “gig economy” because they wanted work where they felt more control, flexibility, and freedom over their career. Many of them also wanted to spread their talents over many jobs, while still having one main job (Istrate, 2017).

The financial and mental stakes of a worker shifting into the gig economy are incredibly high, and this is what hinders workers from making such a transition. It is also a completely different environment that most traditional workers are not used to. There are a myriad of options for work and organizing your “gigs” can be daunting at first. Also, the lack of a manager or employer telling you what to do productivity is the utmost importance. To sustain productivity is to mitigate distractions, and this can be done by focusing on three other concepts, places, routines and people (Wrzesniewski, 2018).

The places to work that these independent workers find can help reduce outside distractions and make them feel part of a community to avoid feeling lost. With the loneliness epidemic spreading across the workforce in the U.S. it is important to maintain social contact. An environment where personal interaction are encouraged will greatly improve the productivity of these already independent workers. When working independently, it is easy to feel like you are floating adrift. Routines can hamper such negative feelings by allowing you to organize your day and your work and helps prevent disorganization, which often leads to distractions.

In order for this new and increasing demographic of workers to be successful in the economy we must create a culture in which these three traits are possible so productivity can thrive. Without doing so will prevent this shift in mindset from happening. I want to investigate how to optimize productivity in this shifting workforce environment by analyzing the actors responsible in this transition. The actors acting in this relationship are not only the workers, but the platforms allowing them to be independent workers, the cities that they these gig workers are working out of, and the mentality and approach the workers take on the jobs themselves. My

research will hopefully conclude in a strategy to create a culture surrounding these independent workers in which can thrive.

### **Conclusion**

To attempt to provide external revenue sources and alternative temporary jobs to workers participating in the gig economy, my capstone team will build a platform that allows home-cooked meals to be delivered to nearby consumers. This new platform in the market will hopefully offer an alternative to the other tech-based gig jobs, and provide workers with a lenient schedule that they can control. Additionally, my STS research will help develop a better understanding of how the culture created around the gig workers affect the productivity of their work. It will also look at ways to improve the environment surrounding the gig economy; this could be from the applications who offer these gig services to the communities these gig workers are a part of. If both of these tasks are completed successfully, platforms who offer gig services can learn how to properly utilize their workers by creating an environment in which they can maximize their productivity.

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