

# THE PROJECT

Software Engineering

CS 130

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# THE PROJECT

## CONSTRAINTS

- Complexity
- Time
- Knowledge

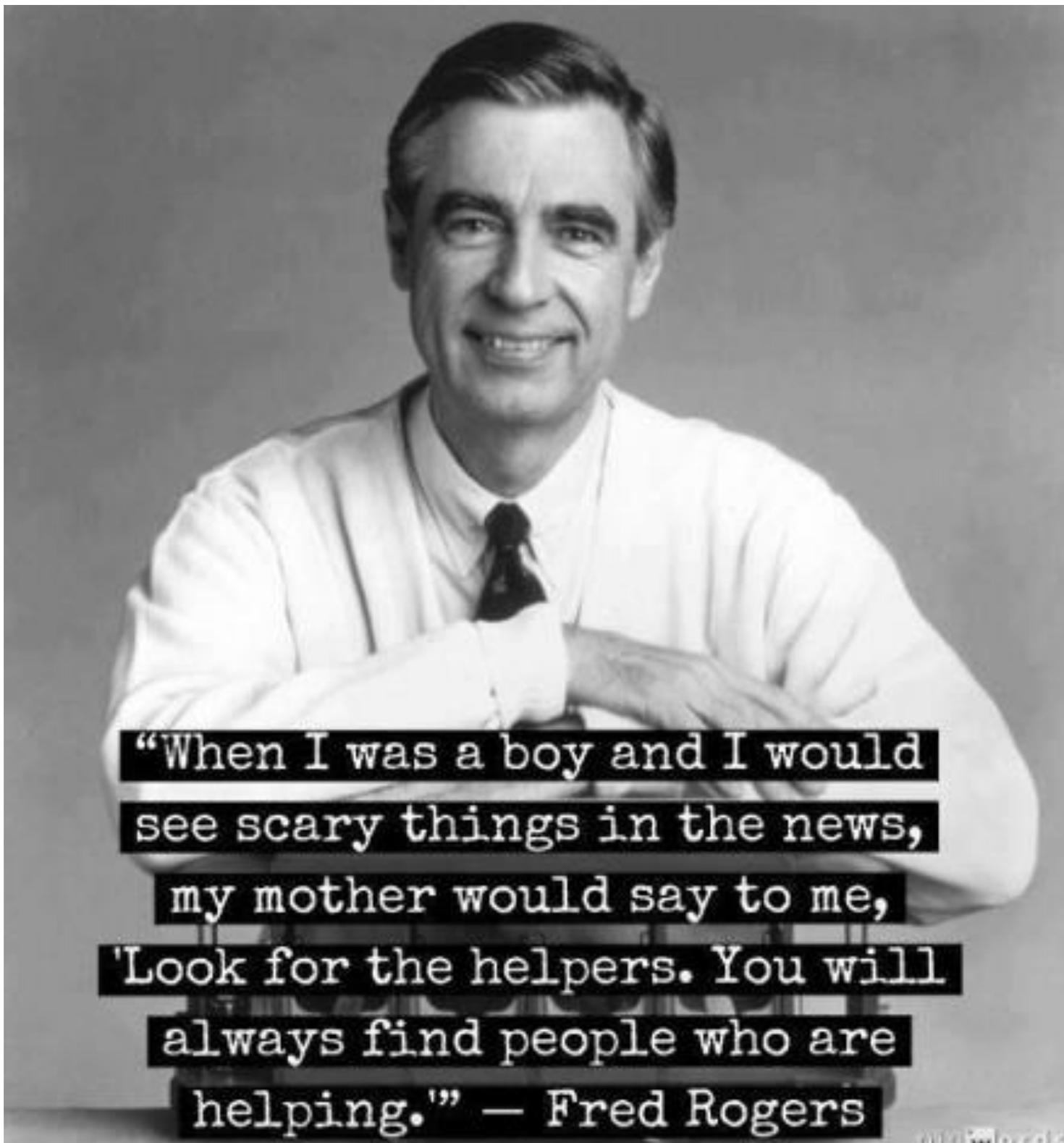


# THE PROJECT

## CONSIDERATIONS

- The UBER Restaurant Waste App
- The Resource Finder App
- The Backyard Bounty App





"When I was a boy and I would see scary things in the news, my mother would say to me, 'Look for the helpers. You will always find people who are helping.'" — Fred Rogers



## It Takes a Network to Get Based Systems to Ac

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### ABSTRACT

Based on an 18-month qualitative study that included the creation and testing of design considerations and prototype location-based information system (LBIS), this research provides empirical insight into the daily practice of a wide variety of individuals working to address food insecurity in one U.S. county. Qualitative fieldwork reveal that nonprofit organizations in the food assistance ecology engage in location-based information practices that could be enhanced by the design of a LBIS. Two practices that would benefit from a collaborative LBIS are 1) *practices of matching* in which nonprofit workers help individuals who are seeking assistance to food resources and 2) *practices of distribution* in which nonprofit workers help organization access and deliver food resources to clients. In order to support such practices across organizations the cooperative design component of this research suggests that an LBIS should: *support the role of intermediaries* who engage in practices of matching and distribution; provide interactive mapping tools that *match resources to need*; enable organizations to *control visibility* over specific data; and *document work and impact*. This research further suggests that designers should explore the wide variety of spatial patterns that must align and overlap such that ecologies of nonprofit organizations might synergistically work together to address pressing social needs.

### Author Keywords

design, food access, food insecurity, hunger, location-based technologies, nonprofit organizations, cooperative design

### ACM Classification Keywords

H.5.3 Group and Organization Interfaces: Collaborative Computing.

### General Terms

Design, Human Factors.

### INTRODUCTION

A wide variety of organizations support delivery of food to those in need. While food service organizations and those they serve would benefit from coordination an

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## Intermediated Technology

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### ABSTRACT

We describe a prevalent mode of information access in income communities of the developing world—*intermediated interactions*. They enable persons for whom technology is inaccessible due to non-literacy, lack of technology-operation skills, or financial constraints, to benefit from technology through digitally skilled users—thus, expanding the reach of technologies. Reporting the results of our ethnography in urban slums of Bangalore, India, we present three distinct intermediated interactions: inputting intent into the device *proximate enabling*, interpretation of device output *proximate translation*, and both input of intent and interpretation of output in *surrogate usage*. We present requirements and challenges in interface design of these interactions and explain how they are different from direct interactions. We then explain the broader effects of these interactions on low-income communities, and present implications for design.

### Author Keywords

ICT4D, HCI4D, urban slums, intermediated interaction, human-mediated computer interaction

### ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI). Miscellaneous.

### INTRODUCTION

Human-computer interaction, as the name suggests, is concerned with direct interactions between the user and computer (see fig. 1, top). Many applications are designed for personal use and private ownership [17]. They assume that the user has digital literacy. However, in many contexts, use of technology is indirect; intermediation by another person occurs when the primary user is not capable of using a device entirely on their own. For example, many people rely on experts in the field to help them set up home networks [10] or to figure out how to use the Internet [19].

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## Social Justice-Oriented Interaction Design: Outlining Key Design Strategies and Commitments

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### ABSTRACT

In recent years, many HCI designers have begun pursuing research agendas that address large scale social issues. These systemic or "wicked" problems present challenges for design practice due to their scope, scale, complexity, and political nature. In this paper, we develop a *social justice orientation* to designing for such challenges. We highlight a breadth of design strategies that target the goals of social justice along six dimensions – *transformation, recognition, reciprocity, enablement, distribution, and accountability* – and elaborate three commitments necessary to developing a social justice oriented design practice – *a commitment to conflict, a commitment to reflexivity, and a commitment to personal ethics and politics*. Although there are no easy solutions to systemic social issues, a social justice orientation provides one way to foster an engagement with the thorny political issues that are increasingly acknowledged as crucial to a field that is not just about technological possibility, but also about political responsibility.

### Author Keywords

Social justice, social change, design, interaction design, politics of design, social issues

### ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous

### INTRODUCTION

In recent years, members of the design and HCI communities have shown increased interest in addressing large-scale social challenges through their design and research practices. These research and design agendas include projects focused on economic and social development [64, 116], sustainability [33], food insecurity [35], homelessness and housing [7, 78, 122], street harassment [28], and domestic abuse [22, 29]. Such systemic or "wicked" problems [75] present new challenges for our theoretical and design practices, in part due to their

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scale, scope, and complexity [see also 12]. Moreover, as noted by design and urban planning scholars Rittel and Webber, wicked problems are also characterized by their lack of a clear objective answer or solution. Rather, interventions in these kinds of complex social issues always raise questions of privileging some values and stakeholders over others [104]. Research and design projects that examine or intervene in large scale social issues thus require scholars to engage directly in (or against) both state (e.g. laws, the national-social politics of welfare programs) and personal level politics (e.g. the implicit and explicit ethical and moral stances of designers, research participants, and funding agencies). Grappling with these politics is particularly challenging given the field's historical inclinations towards treating technological development as unquestionably progressive, or approaching research and design in an apolitical and ahistorical manner [see critiques by 9, 83, 123]. The recent growing interest in research related to large scale social issues underscores the imperative to heed more general calls for HCI researchers and designers to ask not only what is technologically possible, but also how to design ethically, responsibly, and with accountability – and to thoughtfully consider whether design is even an appropriate intervention in a given situation [8, 9, 12, 14, 32, 33, 43, 60, 83, 111, 114]. In this paper, we develop *social justice-oriented interaction design* as one response to these concerns and provocations.

Design is inherently about change – not just in the creation of new material artifacts, but in the ways that new technological objects afford new practices, social habits, and ways of living and interacting. As design scholars Dunne and Raby write, design is always engaged in a process of "changing reality rather than simply describing it or maintaining it" [39]. However, progressive change does not happen naturally. As Bardzell and Light argue, a focus on designing for the status quo – e.g., for what a majority of research participants already want or need – often leads to the re-entrenchment of problematic inequalities and power relations, privileging elite social groups and marginalizing others [9, 83]. In this paper, we argue that an explicit engagement with social justice can help guard against this tendency, and facilitate more equitable social change by providing a set of strategies and commitments to guide

# POSSIBLE TITLES

FOOD BANK ALLY

ALLY

HAND-UP

NEED AND DEED

RE-SOURCED

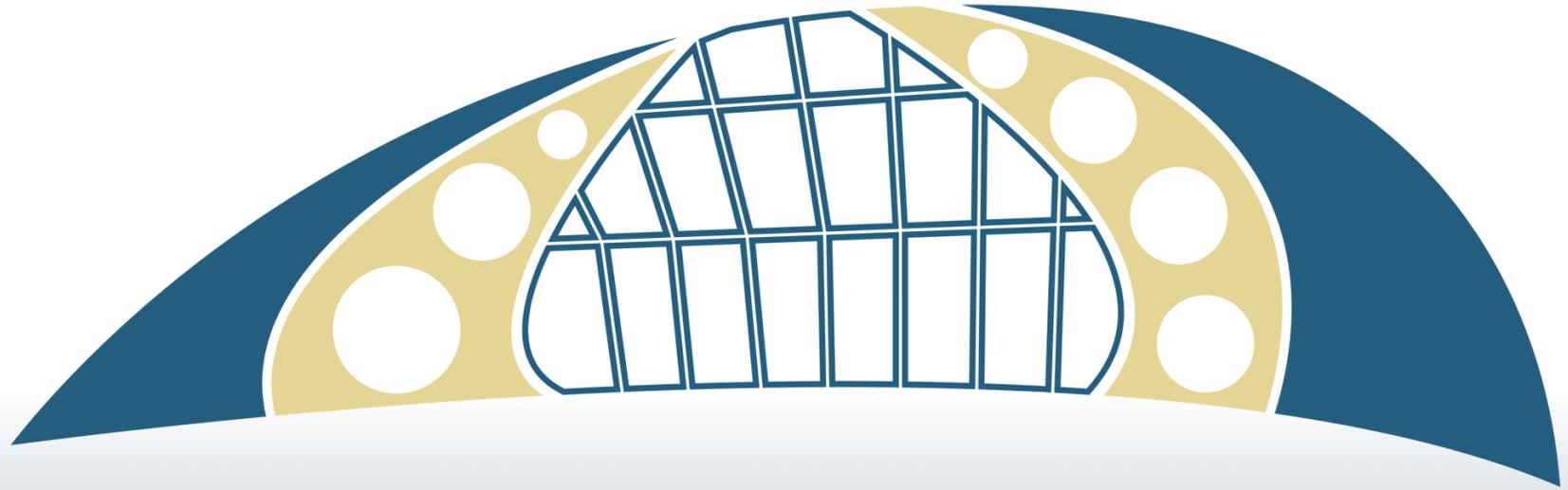


# THE PROJECT

## TECHNOLOGY

- Mobile Website
- HTML
  - Layout Framework
    - Bootstrap
- Interactivity
  - jQuery
- Server Interaction
  - CakePHP





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