Temporary Agricultural Labour in Canada: Possible New Directions for HCI

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Possible New Directions for HCI

Olivia, Doggett

Faculty of Information, University of Toronto, olivia.doggett@mail.utoronto.ca

Matt, Ratto

Faculty of Information, University of Toronto, matt.ratto@utoronto.ca

This qualitative research study considers the rise in temporary agriculture labour alongside recent developments in agri-food technologies in Canada. Given the prominence and precarity of temporary agricultural labour in Canada, it is critical to investigate how emerging technologies impact the social and hierarchical nature of relationships and labour processes on farm sites as well as how these technologies are designed to participate in existing agricultural processes. This study will rely on semi-structured interviews with migrant farmworkers, greenhouse owners, and agri-tech company subject matter experts and on-site visitations to greenhouses in southwestern Ontario to conduct this qualitative research.

1 INTRODUCTION

In 2018, two significant developments emerged in Canadian agriculture and farming practices. First, the number of temporary agricultural workers in Canada reached a record high. As of 2018, 54,734 migrants entered Canada to work in agriculture on a temporary basis rising from 29,000 people in 2009 [14][34]. Upon arrival into Canada, migrant farmworkers do not hold the same rights and freedoms as citizens, permanent residents or refugees [39]. This lack of legal security can lead to a complexity of barriers and inequalities that affect temporary workers' health, safety, and freedoms [6].

The second development that occurred in 2018 was the Canadian federal government allotted $5 million toward developing greenhouse automation [16]. The following year, the government invested a further $49.5 million to Canadian Agri-Food Automation and Intelligence Network (CAAIN) [18][19]. These federal investments support technologies such as remote sensing of soil moisture levels [17], automated vertical farming systems [32], and robots programmed for water irrigation in greenhouses [18]. There is concern, however, that agri-food automation and precision technologies are also being used for 'farm management' or involuntary surveillance of migrant farm labour [35] and that some of these technologies do not consider existing migrant farming practices [31]. Given both the prominence and precarity of temporary migrant farm work in Canada, it is critical to investigate how these technologies impact the social and hierarchical nature of relationships and labour processes on farm sites such as greenhouses as well as how these technologies are designed to participate in existing agricultural processes. Existing and historical migrant farm labour processes should also be included in this investigation as the designation of migrant farm labour as 'low-skilled' has likely led to its exclusion as a site worth studying. Through this project, we plan to investigate two major research questions: (1) How are migrant farm workers affected by increased automation in their labour practices? and (2) How are agri-food automation technologies designed to participate in existing agricultural processes?

Through participation in the CHI 'Migration and Mobility in HCI' workshop, we would like to explore the following questions and topics:

- There is currently a lack of HCI literature addressing domestic migrant work in general but particularly in the context of rural labour. What are the challenges in conducting research in these areas and what is the perceived relevance for the field of HCI?
- What methodologies have been employed by others to study circular migration patterns in HCI?
- How do others conduct research with vulnerable migrant communities from an ethics of care perspective? How and when is data collected and analysed?
- What are some best practices for establishing community partnerships for conducting research? What are the benefits and drawbacks of these partnerships and how do they contribute to the 'real-life' impact of the research?
- How can we conduct HCI research that helps to solve pressing climate change challenges that require rapid and radical action and attention while also adhering to design social justice principles, which advocate for the centering of marginalized people's perspectives and needs through community building?

2 MIGRANT FARM WORK IN CANADA

Canada has a long history of relying on temporary foreign labour to sustain its food systems [2][26]. The Seasonal Agricultural Workers Programme (SAWP) was established in 1966 in Canada in response to a severe agricultural labour shortage [14]. SAWP participants are invited to apply each year from 12 countries in the Caribbean as well as from Mexico [7][11]. Work contracts range from 6 to 8 months [27]. The Temporary Foreign Workers Programme (TFWP) was introduced in 1973 as a more flexible alternative to SAWP. Individuals may apply for a work permit from any country and the employment contract is not time-restricted [27]. In recent years, a rising proportion of agricultural work in Canada has been conducted by workers under SAWP and TFWP as is exemplified in 2018, where 54,734 migrants entered Canada to work in agriculture, making up the majority of the agricultural production and packing workforce [7].

Temporary migrant farm workers do not have the same rights as Canadian citizens or those entering under a 'high skilled' working visa, leading to a complexity of barriers and inequalities that affect these individuals' health, safety, and freedoms [6]. Both SAWP and TFWP point to how the economic viability of food production and processing in Canada is dependent upon migrant farmworkers who face deep-seated racial and economic inequalities [39].

3 IMPACTS OF EMERGING AGRI-TECH ON FARM WORKERS

Some of the promised benefits of adopting automation and technology in agriculture are "cutting down the cost of labor, helping to grow and deliver food in fast efficient ways, and making food and its production cheaper, healthier, and more environmentally sustainable" [31]. These benefits do consider some of the impacts that technologies have already had on existing agricultural labour processes. Automation has cut greenhouse jobs in half on some farming sites and surveillance technologies are beginning to be employed "to regiment workers to determine their pace at work and their production levels" [31]. Furthermore, workers report that these new technologies often make mistakes or miscalculations or work too slowly, which can be very stressful as while "robots cannot be penalized for their slow pace, agricultural workers can" [31].

4 EXISTING LITERATURE IN HCI

In the *ACM Digital Library,* there is a small cluster of existing research on migrant farmworkers that was conducted from 2010 to 2014 in rural China. These papers mainly focus on public service digital infrastructures designed to support migrant farm workers [24][25][38][39]. There is also a limited body of literature addressing rural farming more broadly focusing on such areas as supporting home-work coordination on the farm [20] leveraging permaculture philosophies to open up new directions for sustainable HCI [21] and how to rethink digital platforms for rural Indian farmers who are emergent technological users [8]. Scholarship on domestic migrant labour more broadly is clustered in the areas of media platforms and practices [9][22] and building digital infrastructures [30].

While there is little research addressing migrant farm labour specifically, a couple of studies mention hired farm workers and the potential impacts of emerging agri-tech for these people [12][32]. In their discourse analysis of Big Ag start-up websites in the U.S. (2019), Steup, et. al. describe how certain farm management software companies sell labour management products which assume "human workers […] are inefficient by nature; automation is more time-and cost effective" [32]. Another study situated on a Rwandan crop farm that is piloting drone technologies owned and operated by a multinational company, investigates farm workers' perceptions and concerns regarding the possibility of drones being introduced to their daily work [12]. Both of these projects use critical data studies to critique data's perceived objectivity and to call into question who data collection is really for [12][32].

Critical data studies along with Sustainable HCI and adjacent areas of HCI related to mobility and circular migration are all important areas to further consider in relation to migrant farm labour. The area of rural computing is also worth exploring particularly given the unique considerations related to digital infrastructure, geographic isolation, and how technologies are commonly misaligned with rural considerations as they have been designed in accordance with urban assumptions [12]. While rural farming HCI studies have been conducted in the Global North or the Global South, very few have focused on entanglements between the two developmental regions.

5 IMPLICATIONS FOR HCI

For our future work, we will investigate the impacts that emerging agri-food technologies have on migrant labour practices in southwestern Ontario, Canada. We will use qualitative methods of semi-structured interviews with migrant farm workers, greenhouse farmers and agri-food tech company subject matter experts as well as on-site visits and observations of the greenhouses. Through this exploration, we will hope to determine ways to centre migrant labourers in the development of agri-food technologies in order to improve safety, working conditions, sustainability and agency.

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