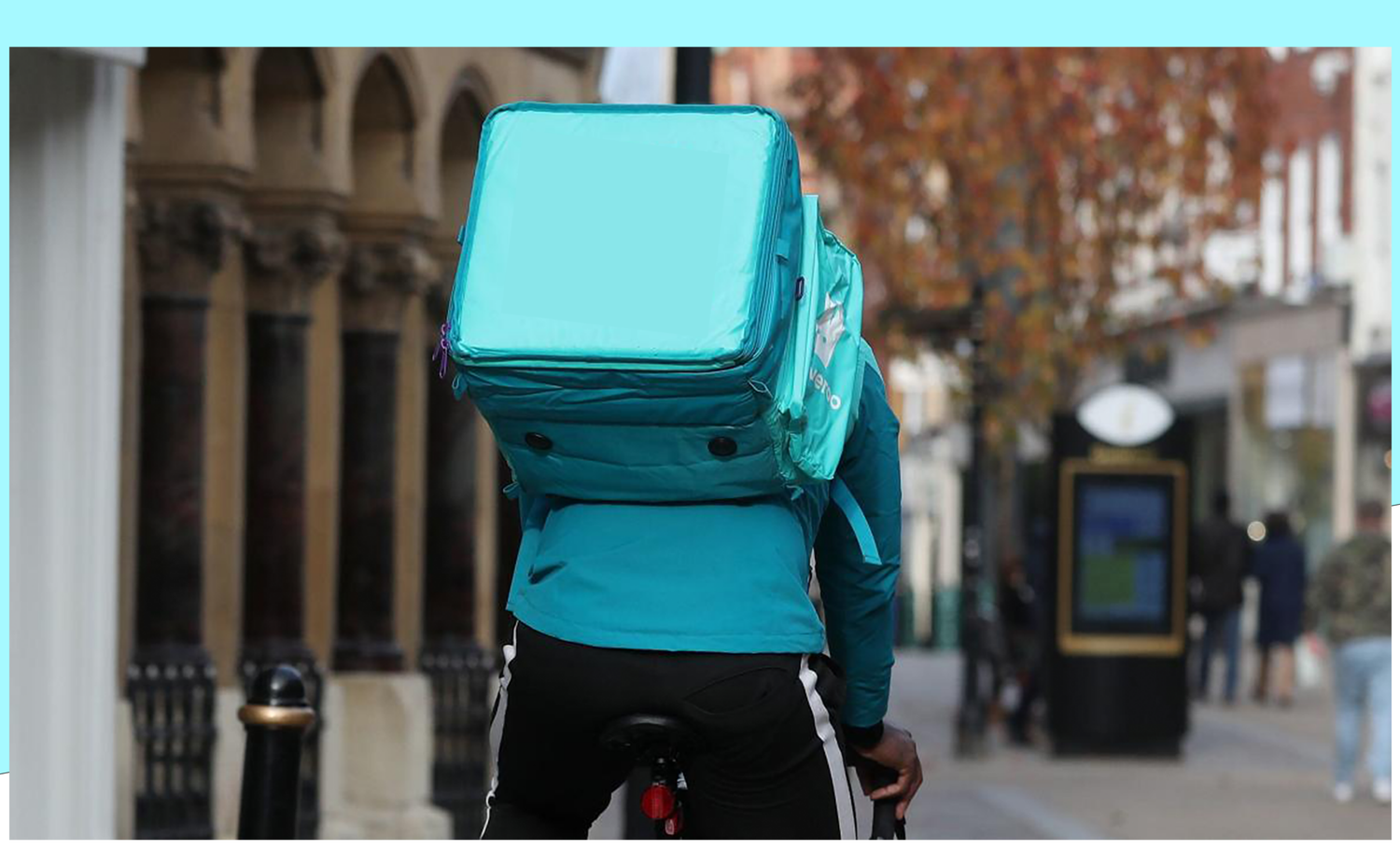
Increasing Empathy Towards Gig Workers Through Communicating Live Heart Rate Data

Context

The proliferation of new and increasingly diverse digital labour platforms is one of the major economic developments of recent years (Healy, Pekarek, & Vromen, 2020). This platform labour economy has generated opportunities for flexible work and business innovation, but it has also created significant economic, social, and personal challenges for so called Gig Workers. Gig workers are defined as 'people who enter into formal agreements with on-demand companies to provide services to the company's clients' (Donovan, Bradley, & Shimabukuro, 2016). Within analysis of 28 papers, gig work is described to be short term (73.08%), requires the completion of finite assignments (84.62%), and allows loose boundaries for when and where people must work (80.77%) (Watson, Kistler, Graham, & Sinclair, 2021). These characteristics have resulted in gig work being precarious. Meaning it is often low paid, temporary, provides no health, training, or retirement benefits, and shifts more of the risk of doing business from the employer to the contractor (Bajwa, Knorr, Ruggiero, Gastaldo, & Zendel, 2018). Gig work is seen as insecure and exploitative by many labour and organizational scholars (Stanford, 2017), (Doorn, 2017), (Aroles, Mitev, & Vaujany, 2019).



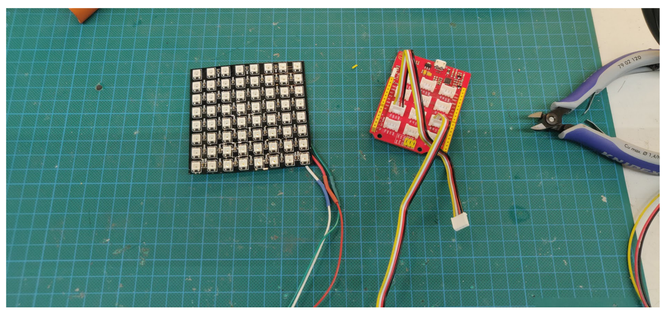
Approach

Through a combination of experimenting, prototyping, testing and literature research in a Data-Centric Design Process a Proof of Principle was created to address the problem: a lack of empathy between Gig-workers and consumers.
To take a deeper dive into the most important definitions and aspects, more foundational research was done on the following topics; the definition of empathy, (bio-)sensors and static vs dynamic data. Through experimenting with sensors, meaningful insights were found regarding the trustworthiness and useability of different data streams. , Furthermore, an experiment was proposed to generate quantitative substantiation for the use of dynamic versus static data and its effect on empathy within context.
All the findings from the research done have been integrated into Design Drivers which drove the synthesis into one final Design output.

Prototype

The final design output was meant as a Proof of Principle. The goal of this output was to create a tangible showcase of what could be a possible concept to imrpove the problem stated. This Proof of Principle was prototyped in order to showcase it and enhance the tangible understanding of the design.
The showcase consists out of an integrated 8x8 LED grid that is inserted into the fabric of the working outfit for a Delivery Rider. To diffuse the light, foam was cut at the right thickness and placed in front of the grid. This was sewn at the recogniseable location of a biological heart. The display shows a red heart that flashes according to the live heart rate data that is measured through optical heart rate sensors.
The concept was designed based upon the following Design Drivers as foundation for this priciple:

- Evokes empathy from consumers towards delivery riders
- Communicate Dynamic Data
- Includes Heart Rate data
- No application expansion
- Improving gig-workers' repute



Bent Verhoeff
Increasing Empathy Towards Gig Workers
Through Communicating Heart Rate Data
18/08/2022
Graduation Project - Integrated Product Design

Committee Dr. ir. Bourgeois, J.
Dr. Verma, H.

Company Applied Labs - TU Delft

TU Delft

Faculty of Industrial Design Engineering

Delft University of Technology