Paper 1: Y. Iravantchi, M. Goel, and C. Harrison. 2019. *BeamBand: Hand Gesture Sensing with Ultrasonic Beamforming*. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19). Association for Computing Machinery, New York, NY, USA, Paper 15, 1–10. DOI:https://doi.org/10.1145/3290605.3300245

BeamBand is a wrist-worn system that uses ultrasonic beamforming for hand gesture sensing. Using an array of small transducers, arranged on the wrist, we can ensemble acoustic wavefronts to project acoustic energy at specified angles and focal lengths. This allows us to interrogate the surface geometry of the hand with inaudible sound in a raster-scan-like manner, from multiple viewpoints. We use the resulting, characteristic reflections to recognize hand pose at 8 FPS. In our user study, we found that BeamBand sup- ports a six-class hand gesture set at 94.6% accuracy. Even across sessions, when the sensor is removed and reworn later, accuracy remains high: 89.4%. We describe our soft- ware and hardware, and future avenues for integration into devices such as smartwatches and VR controllers.

Why? I love the idea since a child when I watched many movies where the characters would interact with an interface shown on the air.

Paper 2: H. Verma, F. Evéquoz, G. Pythoud, G. Eden, and D. Lalanne. 2019. *Engaging Pedestrians in Designing Interactions with Autonomous Vehicles*. In Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems (CHI EA '19). Association for Computing Machinery, New York, NY, USA, Paper LBW0126, 1–6. DOI:https://doi.org/10.1145/3290607.3312864

Driverless Passenger Shuttles are operating as a public transport alternative in the town of Sion Switzerland since June'16, and traversing the populated commercial and residential zones of the city center. The absence of a human driver and the lack of dedicated AV-pedestrian interface makes it challenging for road users (pedestrians, cyclists, etc.) to understand the intent or operational state of the vehicle and negotiate road usage. In this article, we present a co-design study aimed at informing the design of interactive communication means between pedestrians and autonomous vehicles (AVs). Conducted in two stages with the local community –which is accustomed to the AV's ecosystem and has interacted with it on a daily basis– the study highlights the interactive experiences of road users, and furnishes contextualized design guidelines to bridge the communication with the pedestrians.

Why? It became interesting as I read about their proposal to modify autonomous vechiles in such a way that people would learn to understand the "state of the machine", I believe works like these are very important since the technology industry goal is to mass produce automobiles like these for the future.

Paper 3: Md. S. Uddin and C. Gutwin. 2021. T*he Image of the Interface: How People Use Landmarks to Develop Spatial Memory of Commands in Graphical Interfaces*. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 515, 1–17. DOI:https://doi.org/10.1145/3411764.3445050

Graphical User Interfaces present commands at particular locations, arranged in menus, toolbars, and ribbons. One hallmark of expertise with a GUI is that experts know the locations of commonly-used commands, such that they can fnd them quickly and without search- ing. Although GUIs have been studied for many years, however, there is still little known about how this spatial location memory de- velops, or how designers can make interfaces more memorable. One of the main ways that people remember locations in the real world is landmarks – so we carried out a study to investigate how users remember commands and

navigate in four common applications (Word, Facebook, Reader, and Photoshop). Our study revealed that people strongly rely on landmarks that are readily available in the interface (e.g., layout, corners, and edges) to orient themselves and remember commands. We provide new evidence that landmarks can aid spatial memory and expertise development with an interface, and guidelines for designers to improve the memorability of future GUIs.

Why? I feel understanding how people begin to understand the set of possible interactions with a GUI is a very important step towards constructing better GUIs, in other words I believe it is important to hear what they have to say.