

## METAPHORIC INTERFACES

*A case study for the digitally enabled luxury kitchen*

Successful interfaces have often been the result of powerful metaphors. By likening an unfamiliar context to one we are more familiar and experienced with, it becomes relatable and easier to navigate.



## BLACK BOXES

With its wealth of sensory stimuli, the kitchen space offers enormous opportunities for the creation of such metaphors. At the same time, the act of cooking is riddled with sensory “black boxes”: Moments in which little to no information is available to the senses. In the kitchen, those are often caused by literal boxes: Ovens, microwaves, fridges, etc.

Whenever these moments occur, the cooking process moves beyond sensory reach. Being deprived of any direct means of probing food throughout the process presents a significant challenge: Clues that would otherwise inform decisions and provide reassurance are no longer intuitively available.

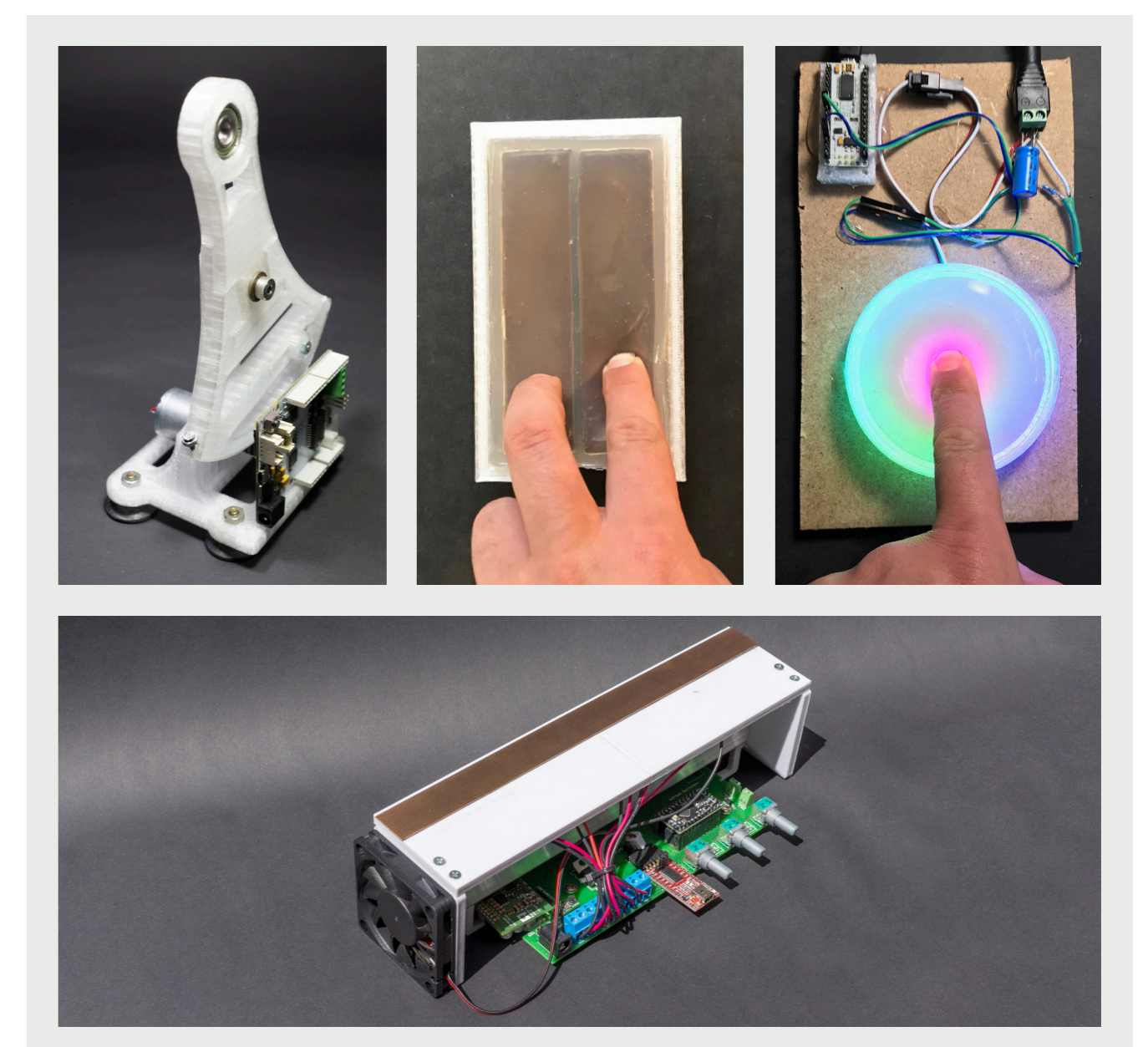
## MULTIMODALITY

The lack of tangible, practical information is a core challenge for the development of future kitchen appliances. This thesis explores multimodality as a tool to resolve the difficulties users are currently experiencing.

Multimodal interactions describe interactions that make use of multiple senses at once. By investigating the roles different senses play in human perception, this project builds a repertoire of engaging communication tools. Various techniques are developed to frame information in multisensory ways. By tailoring these techniques to their context of use, they can elicit experiences that are situationally relevant and enjoyable to the user.

## THE MULTIMODAL DIAL

Using the findings of the multimodal explorations, this thesis developed a concept using haptic, spatial, and visual modalities. The interface of an oven was altered to guide users towards helpful and relevant information. This was done by including a multimodal dial into an oven’s display unit. The dial uses its repertoire to expose information on ongoing processes that would typically be out of reach to users. By modulating its stiffness and texture it can, for example, tangibly inform users about the cooking progress. This three-dimensional, dynamic exploration of evolving processes helped users understand their choices and increased their confidence and enjoyment throughout the experience.



## COMPANY

This graduation was kindly supported by Gaggenau. As a luxury kitchen appliance manufacturer, the company has an interest in developing interfaces that bridge the gap between the rich, sensorial experience of food that is deeply rooted in the physical world and the digital future of technology. This thesis will hopefully contribute new insights to help Gaggenau shape the future of kitchens.

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