

Human-AI interaction design for e-scooter safe riding experiences

Background:

As E-scooter is rapidly changing the transportation behaviour and experiences of urban travellers, questions about safety start to emerge. Accidents such as crashes with pedestrians, bikes, and cars have been reported in major cities worldwide. Approaching this problem from a design perspective, interactive products together with behaviour interventions can be introduced to facilitate safe riding experiences of e-scooter users while improving the overall UX and interaction design of the e-scooter.

Project goal and vision:

The overarching aim of the project is to promote e-scooter users' safe riding behaviour especially in dense urban areas. To achieve this aim, the project focuses on exploring and developing technology-oriented solutions/interventions to improve the interaction between e-scooter and e-scooters.

Specifically, the project intends to adopt concepts and features from Machine Learning (ML) to enhance the safe driving experience. The initial idea is to upgrade the e-scooter with sensors (e.g., camera) and a virtual assistant that can automatically detect and inform the user about the surrounding objects and road conditions.

Please note that you don't have to know the technical details regarding how to implement ML as the project focuses more on the behaviour and design aspects. Heavy programming is not needed in the project. This means that your technical solution/intervention does not need to be fully functional in practice. The part which is hard to implement can be developed and evaluated by using the Wizard of Oz method.

The project would comprise three phases: 1) problem identification, 2) initial concept exploration, 3) prototype development, iteration, and evaluation. To be more specific, you will first start the project by observing people's e-scooter driving behaviour and identifying underlying safety concerns. Then you will generate alternative design solutions and select one solution to develop further. After that, you will need to prototype that solution and evaluate the solution in practice. We would provide the literature and material support.

Project scope:

The project is specifically focused on the aspect of e-scooter safe riding. The contextual factors which may influence users' collaboration with e-scooters on the road should thus be considered in your design. The other e-scooter-related aspects, such as subscribing for services, unlocking and locking the e-scooter, docking, charging, and maintenance, would be excluded in the scope of this project.

Expected outputs of the project:

- A high-fidelity prototype that clearly illustrates your design solutions
- Suggestions and design guidelines for enhancing the safe riding experiences.

Pre-requirements (regarding this project):

- Good understanding of different design research methods (mainly qualitative), in particular, Wizard of Oz technique.
- Basic design and programming skills (e.g., prototyping development and evaluation).

- Strong interests and curiosities about Human-AI Interaction (HAI) from a design perspective.

What you will gain from the project:

- An in-depth understanding of HAI from a design perspective.
- Hands-on skills in incorporating the characteristics and features of ML into product design and UX.
- Theoretical knowledge on design for sustainable behavior and behavior transformation.
- Practical design experiences in solving a real-world problem.

Contact person for the project:

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