

Research Grants for PhD students from the China Scholarship Council

Information Form (please read the guidelines carefully on the website www-csc.utt.fr)

Supervisor's name : Mohsen Given names : Zare

Status (prof., assistant prof., ...): Associate Professor. HDR

Laboratory : ELLIADD Website address : <https://elliadd.univ-fcomte.fr/>

Institution : UTBM Website address : <https://www.utbm.fr/>

Scientific competence of the supervisor:

Specialist in human factors engineering, with a research focus on motion sickness prevention. He has led and contributed to multiple projects addressing the mechanisms, assessment, and mitigation of motion sickness, and has produced several peer-reviewed publications in this field.

Two major publications in the field proposed for the PhD :

1. Emond, W., & Zare, M. (2026). Motion sickness in stop-and-go passenger rides: influence of individual characteristics, contextual, behavioural, and physiological parameters. *Ergonomics*, 1-18.
2. Emond, W., & Zare, M. (2026). Motion Sickness Mitigation in Automated Vehicles: A Review on Parameterizing Driving Style for Passenger Comfort. *IEEE Access*.

Website address of the personal page : <https://www.linkedin.com/in/mohsen-zare-91932044/>

Supervisor's email : Mohsen.zare@utbm.fr

Description of the research work proposed for a PhD

Topic # (see list) : VI-7

Title : A Predictive Framework for Motion Sickness Based on Human Response and Motion Exposure

Subject :

This PhD project aims to develop a predictive model of motion sickness, a recurrent issue affecting comfort and potentially safety in automotive, aviation, and rail contexts. The research will begin with a critical review of existing theoretical frameworks and the identification of key influencing factors, including motion characteristics, visual conditions, and individual susceptibility. Controlled experimental studies will then be conducted using simulators and, where possible, real vehicles to collect synchronized motion data and subjective responses. These data will be analyzed to extract relevant features and quantify relationships between exposure and symptoms. Based on these findings, predictive models will be developed and validated to ensure robustness and generalizability. The final phase will focus on simulation and application, enabling the evaluation of design and operational strategies aimed at reducing motion sickness. The project seeks to provide both a validated modeling framework and practical guidelines for improving user comfort.

Keywords :

motion sickness; human factors engineering; predictive modeling; experimental design; motion analysis;

Expected collaborations :

Several collaboration opportunities can be envisaged at both national and international levels, particularly with partners in the United States, Germany, and other research laboratories in France. These collaborations would support complementary expertise in human factors, motion analysis, and experimental methodologies.

Background required from the applicant :

The applicant should have a background in human factors engineering, mechanical engineering, biomechanics, or a related field, with skills in experimental design, data analysis, and programming (e.g., Python or MATLAB). Experience in motion analysis or human-subject studies is desirable, along with the ability to link experimental data to modeling approaches.

Existence of a PDF file detailing the proposal ("yes" or "no") : No

(see guidelines on the website www-csc.utt.fr)