

Contract type: **Postdoctoral fixed-term contract** (22 months)

Location: Gustave Eiffel University, Bron campus

Field: auditory perception, psychoacoustics, sound design, cognitive ergonomics

Start date: as soon as possible

Project Background

In the context of the transition to electric mobility, the near-silent operation of electric vehicles (EVs) has been identified as a significant factor contributing to the enhancement of the risk of collisions, due to the substantial reduction in pedestrians' ability to detect, locate, and anticipate the approach of vehicles. Despite the fact that Acoustic Vehicle Alerting Systems (AVAS) are mandated by European regulations, a considerable number of parameters remain unexplored and unspecified.

The objective of the ASPIC project is to ascertain the acoustic characteristics of AVAS signals that optimise the detection, localisation and anticipation of an electric vehicle's arrival. The ultimate goal of the project is to reduce the risk of collisions with pedestrians.

Responsibilities

In collaboration with a researcher from UGE, a research director at IRCAM, and a sound designer with expertise in the field, the postdoctoral fellow will:

- Analyze and synthesize corpora of existing and experimentally designed AVAS signals;
- Design and conduct two experimental studies: one under controlled conditions (detection and estimation of time to collision), and a second in immersive virtual reality (pedestrian crossing behavior);
- Collaborate with an IRCAM sound designer on the parametric design of acoustic stimuli;
- Supervise a master's-level intern involved in the second experimental phase;
- Analyze the behavioral data collected;
- Contribute to the dissemination and promotion of results: presentations at scientific conferences, writing articles for scientific journals;
- Participate in the development of a technical framework of recommendations for the design of AVAS (Acoustic Vehicle Alert Systems).

Qualifications

- Ph.D. in acoustics, cognitive psychology, cognitive science, ergonomics, or a related field;
- Experience in designing and conducting experimental protocols involving human participants;
- Skills in statistical analysis of behavioral data (R, Python, or equivalent software);
- Knowledge of psychoacoustics and/or environmental sound perception is highly desirable;
- Interest in and knowledge of audio production techniques and sound design;
- Experience with virtual reality devices is desirable;
- Good command of scientific English (writing articles, presenting at conferences);
- Ability to work independently, methodological rigor, and a passion for working in interdisciplinary teams.

Application

Interested candidates are invited to send a resume and cover letter to baptiste.bouvier@univ-eiffel.fr.

Salary will be determined based on the candidate's experience.