

## POSTDOC PROPOSAL IN ARTIFICIAL INTELLIGENCE

### Automatic speech recognition for an in-car voice assistant

**Advisor (s):** Thomas PELLEGRINI – [Thomas.pellegrini@irit.fr](mailto:Thomas.pellegrini@irit.fr)

<https://www.irit.fr/~Thomas.Pellegrini/>

**Net salary:** according to experience

**Duration:** 14 months

**Location:** **Duration:** Computer Science Research Institute of Toulouse (IRIT), Toulouse, France. <https://www.irit.fr/en/>

### DESCRIPTION

Am2030 aims at enabling car manufacturers to have their own in-car audio application, regardless of the operating system. they will be able to deploy a global audio experience and offer the best content and proactive services to drivers. it is positioned as a true road companion that will help consumers adopt eco-responsible behaviors: vehicle self-diagnosis and maintenance reports, advice on driving and the use of on-board equipment.

**PROJECT PARTNERS:** ETX STUDIO (LEAD), CONTINENTAL AUTOMOTIVE FRANCE SAS, **ANITI**, ÉCOLE POLYTECHNIQUE DE PARIS.

Aniti's role in the project is related to working on human-computer interactions, in particular on natural language understanding. the role of the hired postdoc researcher will be to work more specifically on automatic speech (asr, speech-to-text) in a noisy environment (the interior of a car).

The envisaged line of research focuses on the use of modern text-to-speech systems to generate synthetic speech data. An initial study conducted on the Google Speech Commands dataset demonstrated the feasibility of using 100% synthetic data to train a classifier satisfactorily. This study also revealed that it is still possible to easily distinguish real speech from synthetic speech using representations derived from self-supervised models such as WavLM. We aim to continue this characterization by identifying the dimensions involved in this distinction. Additionally, we seek to optimally align the distributions of real and synthetic speech in the space of self-supervised representations, using GANs or flow matching techniques.

The hired PostDoc will be based at the Computer Science Research Institute of Toulouse (IRIT, <https://www.irit.fr/en/>), located in the campus of the Toulouse III Paul Sabatier University.



**RÉPUBLIQUE  
FRANÇAISE**

*Liberté  
Égalité  
Fraternité*



## **WORKPLACE AND CONTACT**

Institute of Research in computer science of Toulouse (IRIT), Paul Sabatier university site  
118 route de Narbonne  
31062 Toulouse cedex 09

Contact: [thomas.pellegrini@irit.fr](mailto:thomas.pellegrini@irit.fr)

Desired start date: 01/10/2024, as soon as possible.

## **REQUIRED SKILLS**

Applicants should have a phd in machine learning, ideally in speech/natural language processing. Good programming and english communication skills are also required.

## **APPLICATION PROCEDURE**

Formal applications should include detailed cv, a motivation letter and reference letters.  
Samples of published research by the candidate will be a plus.

> applications should be sent by email to: advisor email

More information: <https://aniti.univ-toulouse.fr/>