# Using deep learning to study children's communication development across cultures

Our team CoCoDev offers a fully-funded PhD research position in the framework of our ANR grant MACoMiC (Mastering the Art of Conversation in Middle Childhood) (See description of the project on the ANR website). The detailed research proposal is available upon request.

The broad goal of the PhD researcher is to lead the development of deep learning models of multimodal child conversation using face-to-face video recordings with caregivers across several cultures (see an example from our recent paper).

We are interested in studying the development of various conversational skills including turn-taking dynamics, mechanisms of building shared understanding (i.e., communicative grounding), multimodal synchronization, and discourse coherence/contingency. The selected candidate can focus on one or several of these dimensions, defining a research program together with the main advisor.

## Scientific context

The PhD researcher will work mainly with Abdellah Fourtassi and will be encouraged to collaborate with other members of our highly interdisciplinary and supportive team made of senior and early career researchers in computer science (with expertise in conversational AI), developmental psychology, and neuro-linguistics (CoCoDev members). They will also benefit from the larger context of the Institute of Language Communication and the Brain (to which CoCoDev belongs) (ILCB), including scientific activities with other PhD researchers in the institute (e.g., annual retreats, seminars, and workshops). Additionally, the researcher will enjoy the opportunity to interact with CoCoDev's international community of collaborators (see map).

## Geographical context

The PhD researcher will be primarily located in the computer science lab (LIS) at the Luminy campus of Aix-Marseille University (20 min by bus from downtown Marseille) right next to the Calanque National Park. There is also workspace in other campuses both in Marseille center and in Aix.

## Requirement

- A PhD takes 3 years to complete in France but requires a master's degree or engineering diploma. Bachelor graduates without a master's degree are not eligible.

- The ideal candidate for this position should have a strong background/training in computer science and experience with deep-learning modeling.
- Interest in cognitive and communicative development (though no prior experience is required).
- Mastery of English (French is not required)

## Monthly Salary

Around € 1,500 after taxes (Note that this salary is standardized across all public universities in France). The salary is perfectly compatible with the costs of living in Marseille (e.g., rent prices are 50% lower in Marseille than in Paris) (More info)

## Key dates

**March - April 2022**: Please send (as soon as possible for full consideration):

1) a CV
2) A recent transcript (a university document with courses taken and grades)
2) Contact info of one reference (researcher or professor) you have worked with
3) (Optional) Evidence of prior experience with deep-learning modeling (a publication, dissertation, code on GitHub, etc.)

**Late May 2022**: Interviews with shortlisted candidates

**September 2022**: Starting date

## Inquiries

All kinds of inquiries (scientific project, the university, life in Marseille, etc), as well as the application (CV, etc.), should be addressed to Abdellah Fourtassi (abdellah.fourtassi@univ-amu.fr)