

AI Models for Spanish Language and Speech Decoding from MEG

PhD POSITION OFFER

CONTACT INFO

Eva Navas

Department of
Communication Engineering

University of the Basque
Country (UPV/EHU)

<https://aholab.ehu.eus>

DESCRIPTION

The project aims to decode speech-related brain activity from non-invasive MEG recordings and reconstruct spoken and written language directly from neural signals. Experiments will include listening, overt speech, silent articulation, and imagined speech in Spanish.

The selected PhD candidate will lead the development of AI models that generate speech directly from MEG signals recorded during overt and imagined speech production.

The PhD will:

- Develop brain-to-speech AI models from MEG data
- Progress from command classification to generative speech models
- Explore CNNs, transformer-based models, and diffusion architectures
- Contribute to MEG experiment design and dataset curation
- Implement evaluation protocols for intelligibility and generalization
- Release reproducible datasets and open-source pipelines

The project will explore transformer-based speech models such as Wav2vec 2.0, HuBERT, and Whisper, as well as large language models including GPT and LLaMA variants.

CANDIDATE PROFILE

We seek a highly motivated candidate with:

- MSc in AI, Computer Science, Biomedical Engineering, Computational Neuroscience, or related field
- Strong background in machine learning and deep learning
- Solid Python skills (e.g., PyTorch or TensorFlow)
- Interest in speech processing and/or neural signal decoding
- Excellent written and spoken English skills

Experience with speech technologies or EEG/MEG is a plus.

HOW TO APPLY

Send your CV and a short motivation statement in English to eva.navas@ehu.eus.

- Expected start date: July 2026
- Funding: 4 years (full-time PhD contract)

All applications will be evaluated based on academic excellence, research experience, and alignment with the project goals.

ahōLAB

HiTZ

Hizkuntza Teknologiako Zentroa
Basque Center for Language Technology



Universidad
del País Vasco Euskal Herriko
Unibertsitatea