

# Aynaz ADL ZARRABI<sup>1</sup>

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I am a third-year PhD candidate in Computer science and Cognitive Neuroscience at Femto-ST (CNRS/Université Marie et Louis Pasteur, France), with expertise in Computational modeling and Psychophysics. My academic background includes a Master's in applied mathematics and computer science from Université Toulouse II Jean Jaurès. My research is dedicated to understanding the latent dynamics of sensory decision-making in post-stroke patients. Leveraging data-driven approaches, I aim to uncover the cognitive and behavioral mechanisms underlying impairments in sensory processing.

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## EDUCATION

### PhD in Computer Science 2022-Present

*Femto-ST (CNRS), Université Marie et Louis Pasteur (France)*

Data-driven methods for the diagnosis and prognosis of prosody perception deficits after a stroke; supervised by [Jean-Julien Aucouturier \(PhD\)](#) (Laboratoire Femto-st, CNRS) & [Marie Villain \(PhD\)](#) (ICM, Sorbonne university)

### Postgraduate education in Advanced Modeling of behavior 2024

*BAMB, EMBO Practical course, Centre de Recerca Matemàtica (Spain)*

### Postgraduate education in Neuroanatomy 2023

*Neurocourses, King's College University of London (UK)*

### Postgraduate education in Hearing: from mechanisms to restoration technologies 2022

*Institut Pasteur- Institut d'audition (France)*

### MSc in Computer Science, Statistics and Applied Mathematics 2019-2021

*Université Toulouse II Jean Jaurès (France)*

### BSc in Applied Statistics 2014-2018

*University of Science and Culture (Tehran, Iran)*

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## RESEARCH APPOINTMENTS

### Research Assistant 2020-2021

*Archean Labs, Université Toulouse II Jean Jaurès, Montauban (France)*

Analysis of Speech Perception in Presbycusis patients, supervised by [Lionel Fontan \(PhD\)](#)

### Research Assistant 2020

*CRMBM (CNRS), Hôpital de la Timone, Marseille (France)*

Tissue Segmentation from structural MRI and SPM Analysis with FSLeyes for Charcot-Marie-Tooth disease supervised by [David Bendahan \(PhD\)](#)

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## EXPERTISE

### Softwares

Python, R, SPSS, FSLEYES, SQL, Linux, LaTeX, Tableau, QlikView, PowerBI

### Analytical

Behavioral data modeling (Latent variable models (State-space), Bayesian, DDMs)

### Language skills

French: Fluent, English: Fluent, Persian: Native, Turkish: Native

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## PUBLICATIONS

Aynaz Adl Zarrabi, Mélissa Jeulin, Emmanuel Ponsot, Pauline Bardet, Pauline Commère, Lionel Naccache, JJ Aucouturier & Marie Villain. Separating representational and noise components of speech prosody perception after stroke, Sci Rep 14, 15194 (2024).

<https://doi.org/10.1038/s41598-024-64295-y>

Merchie, A., Ranty, Z., Adl Zarrabi, A., Bonnet-Brilhault, F., Houy-Durand, E., Aucouturier, JJ. & Gomot, M. Intact Representation of Vocal Smile in Autism: A reverse correlation approach, PsyArXiv Preprints, 2024 <https://doi.org/10.31234/osf.io/q4n7z>

Célia Chauche-Lombard\*, Aude Warnery\*, Aynaz Adl Zarrabi\*, JJ Aucouturier, Viviane Luherne-du Boullay, Marie Villain.  
Exploring Prosody Recognition in Glioma Patients: A Reverse-Correlation Study, in prep

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## CONFERENCES

European Society for Cognitive and Affective Neuroscience, Ghent University, Ghent (Belgium) May 2024  
*Exploring Prosody Recognition in Glioma Patients: A Reverse-Correlation Study*

Annual conference Journées Perception Sonore, Ircam, Paris (France) Nov. 2023  
*Separating representational and noise components of speech prosody perception after stroke*

Annual conference of Society of Neurobiology of Language, Marseille (France) Oct. 2023  
*Separating representational and noise components of speech prosody perception after stroke*

Annual Conference Journée de Phonétique Clinique, Toulouse (France) Jun. 2023  
*Psychophysics procedure to characterise impairments of speech prosody perception after brain stroke*

Department of Automatics and Robotics, Femto-st Laboratoire, Besançon (France) Jun. 2023  
*Psychophysics procedure to characterise impairments of speech prosody perception after brain stroke*

Department of Automatics and Robotics, Neuro Group, Femto-st Laboratoire, Besançon (France) Feb. 2023  
*Internal noise Calculation*

Department of Automatics and Robotics, Data-PHM Equipe, Femto-st Laboratoire, Besançon (France) Feb. 2023  
*Psychophysics procedure to characterise impairments of speech prosody perception after brain stroke*

Annual workshop of RDI-BMB (France) May. 2023  
*Psychophysics procedure to characterise impairments of speech prosody perception after brain stroke*

Fondation pour l'audition Laureate Symposium Oct. 2022  
*Psychophysics procedure to characterise impairments of speech prosody perception after brain stroke*

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## TOOLBOX CONTRIBUTIONS

[PALIN](#) - Psychophysics parameters calculations and Simulation API where experiments and observers can be simulated and tested across different configurations 2023 - Present

JONES - Reverse Correlation Psychophysical Experiment 2024

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## TEACHING

### Teaching Assitant

Sorbonne University, Paris, France 2023-2025

*UE New Methods, International Master in Neurodegenerative Diseases (iMIND)*

ENSMM- SupMicrotech, Besançon, France 2022-2024

*Analysis and visualisation of KPIs, Introduction to the R language - Industrial performances*

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## REFERENCES

### Jean-Julien Aucouturier:

Directeur de recherche CNRS, FEMTO-ST Institute, [aucouturier@gmail.com](mailto:aucouturier@gmail.com)

### Marie Villain

Maitre de conference/Orthophoniste, Sorbonne Université, ICM/APHP, [marie.villain@aphp.fr](mailto:marie.villain@aphp.fr)

### David Bendahan

Directeur de recherche CNRS, CRMBM, [david.bendahan@univ-amu.fr](mailto:david.bendahan@univ-amu.fr)