

# Ali Vincent Al-Azem

Research Engineer

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alialazem

**Research Interests** Applied data analysis and modeling, machine learning, cognition, computational linguistics, dynamical systems

## Education

2023–2024 M1 Mathématiques et Applications, Sorbonne Université, Paris

2019–2021 B.Sc. Mathematics, University of California, Los Angeles (UCLA), Los Angeles

## Research

Jun 2025– Co-Author, École Normale Supérieure, Paris

Nov 2025 Co-authored a paper on the role of syllable structure in early language acquisition.

Designed and implemented a data pipeline using the IPA–CHILDES database to analyze syllable composition and frequency across 31 languages.

Nov 2024– Research Intern, Laboratoire de Sciences Cognitives et Psycholinguistique, Paris

May 2025 Designed an fMRI paradigm to investigate neural mechanisms of word processing.

Conducted fMRI acquisition at NeuroSpin and developed preprocessing and analysis pipelines using Nilearn. Collaborated on training RNNs on phonetic data to simulate human word repetition.

Jul 2022– Undergraduate Researcher, University of California, Los Angeles, Los Angeles

Aug 2022 Studied the effects of generalized alcohol use on memory recollection as part of a large-scale meta-analysis. Analyzed mitochondrial DNA using PCR and BLAST to study haplogroup distributions and migration patterns.

## Under Preparation

- [1] K. J. Tey, S. Peperkamp, M. Cychoz, **A. Al-Azem**, and A. Cristia. *Towards a Scalar Approach to Syllable Complexity Classification for Predicting Cross-linguistic Variation in Vocal Development*. 2025.

## Invited Talks

- [2] K. J. Tey and **A. Al-Azem**. “The Relationship Between Phonological Complexity and Canonical Proportion: Cross-linguistic Analysis of Naturalistic Recordings Using Automated Methods”. Invited research presentation at Stanford University, Stanford, CA, USA. Nov. 2025.

## Teaching

Feb 2017– Supplemental Instructor, Riverside City College, Riverside

Jun 2017 Tutored students and held supplemental group classroom sessions in statistics.

## Skills & Interests

**Programming** Python, C/C++, Git, pandas, pytorch, scikit-learn, SQL

**Languages** English (native), French (C1), Spanish (beginner)

**Interests** Climate Change and Energy Transition, Languages, Hiking, Cooking

## References

**Yair Lakretz (P.I.)**

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