

# ALI VINCENT AL-AZEM

Mathematics Graduate | Research Engineer

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## EXPERIENCE

Co-Author

École Normal Supérieure

Jun 2025 – Present Paris

- Co-authoring 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, grounded in phonetic and typological principles.

Research Internship

École Normal Supérieure

Laboratoire de Sciences Cognitives et Psycholinguistique (LSCP)

Nov 2024 – May 2025 Paris

- Designed and implemented an fMRI paradigm to investigate brain regions involved in word processing. Performed extensive cross-linguistic stimulus selection and categorization.
- Conducted fMRI data acquisition at NeuroSpin and developed a preprocessing and analysis pipeline using Nilearn.
- Partnered with a computational team to train deep neural models on phonetic data, simulating human word repetition and probing the cognitive and neural mechanisms behind language processing.

Undergraduate Research Initiative

UCLA

Jul 2022 – Aug 2022 Los Angeles

- Studied on the effect of generalized alcohol use on memory recollection as part of an ongoing meta-analysis on UCLA undergraduate students.
- Analyzed mitochondrial DNA using sequencing techniques (e.g., PCR, BLAST) to study the geographical spread of haplogroups and current migration patterns.

## PUBLICATIONS

Conference Proceedings

- Al-Azem, A., Chemla, E., Zhan, M., Pallier, C., and Lakretz, Y., “Mapping single word processing onto brain dynamics,” in ICCL, Paris, 2025.
- Tey, K. J., Peperkamp, S., Cychosz, M., Al-Azem, A., and Cristia, A., “Towards a scalar approach to syllable complexity classification for predicting cross-linguistic variation in vocal development,” in Stanford University, 2025.

## EDUCATION

M1 Mathématiques et Applications

Sorbonne Université

Sep 2023 – Jun 2024

B.Sc. Mathematics, Regents' Scholar

UCLA

Sep 2019 – Jun 2021

## SKILLS

Python C/C++ Git sklearn

Self-Motivated Open-Minded

## LANGUAGES

English (native)

French (C1)

Spanish (beginner)

## REFEREES

Yair Lakretz (P.I., co-author)

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