

David Abugaber

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PROFESSIONAL EXPERIENCE

- Generative AI Engineer, Deloitte 2023 - present
- Full-stack developer in Government & Public Services division; build Large Language Model-based software for querying government documents and assessing adherence to official policy
- Consultant, National Institutes of Health Grant [Ro1AG065432](#) 2023
- Part-time work performing computational linguistic analyses on spontaneous English and Spanish speech to detect risk markers of age-related cognitive decline as part of large-scale (N=3000) study
- Postdoctoral Research Fellow, Uni. of Michigan Computational Neurolinguistics Lab 2022 - present
- [Project](#) combines wireless EEG, automatic speech transcription, and computational language modeling with generative AI and neural network models to analyze naturalistic conversations
- Graduate Research Assistant, Uni. of Illinois – Chicago 2018 - 2022
- Data analysis and visualization in R for Cognition of 2nd Language Acquisition Lab; Multilingual Phonology Lab; Language in Contact Research Group; and Psychology of Multilingualism Lab

EDUCATION

- PhD in Hispanic Linguistics, University of Illinois - Chicago 2016 - 2022
- [Dissertation](#) used machine learning of EEG and computational semantic metrics of word meaning (e.g., *word2vec*, *GLoVe*, Wu-Palmer distance) to study implicit vs. explicit grammar learning
 - [9 publications with 203 citations; 18 posters & 10 presentations in peer-reviewed conferences](#)
- Master of Philosophy in Linguistics, University of Cambridge 2014 - 2015
- Funded via Gates Scholarship (<1% acceptance rate, top postgraduate award at U. of Cambridge)
- BA in Linguistics, Princeton University 2009 - 2014
- 3.94 GPA; Shapiro Prize (top 3% of freshmen/sophomores); Phi Beta Kappa; *Summa Cum Laude*

TEACHING EXPERIENCE

- Graduate Teaching Assistant, Uni. of Illinois – Chicago 2017 - 2022
- Taught linguistics; Spanish as a foreign language; and Spanish writing for heritage speakers
- English Teacher, International Language Academy, Ho Chi Minh City, Vietnam 2015 - 2016
- Taught English full-time at a Cambridge ESOL- and NEAS-certified language training center
- Gyeongchang Elementary School, Changnyeong, South Korea 2012
- Taught English at a public elementary school in rural South Korea; created own materials/curricula

COMPUTER SKILLS

Python: querying, prompt engineering, and parameter-efficient fine-tuning of Large Language Models such as GPT4 and Llama 2 (*langchain*, *pytorch*, *Transformers*); front-end deployment of applications with Kubernetes and Docker on cloud-based AWS EC2 and NVIDIA DGX environments; natural language processing, e.g., text extraction with regular expressions (*re*) topic modeling, sentiment analysis, semantic analysis via word embeddings, and text classification (*nltk*); data wrangling (*pandas*) and visualization (*matplotlib*, *seaborn*); supervised and unsupervised machine learning (*scikit-learn*)

R: data wrangling (*tidyverse*) and visualization (*ggplot2*, *ggpubr*); statistical power analyses (*simr*); multiple regression (*stats*); linear mixed modeling (*lmer*, *lme4*); generalized additive modeling (*gam*); time series analysis (*forecast*); survival analysis (*fitdistrplus*); drift-diffusion modeling (*rtdists*); supervised machine learning with SVM, k-nearest neighbors, random forest, and others (*caret*)

LANGUAGES

Spanish (native); **Brazilian Portuguese** (near-native: working language during summer internship in Rio de Janeiro); **Italian** (advanced: university-level substitute instructor); **Korean** (advanced: level 4 of 6 on official TOPIK exam); **German** (intermediate: study abroad, immersion during summer internship in Berlin); **French** (intermediate: coursework and weekly language exchange); **Vietnamese** (basic: intensive study at Vietnam National University, immersion with host family in Ho Chi Minh City)

SELECT HONORS & AWARDS

National Science Foundation Postdoctoral Research Fellowship (\$138,000); Dingwall Fellowship in the Cognitive, Clinical, and Neural Foundations of Language (\$30,000); American Philosophical Society John Hope Franklin Fellow (\$25,000); NSF Dissertation Improvement Grant (\$8,446); two-time Kavli Cognitive Neuroscience Fellow; NSF Graduate Research Fellow (\$132,000)