

KINAN MARTIN

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EDUCATION

Massachusetts Institute of Technology

Master of Engineering in Computer Science and Cognition

Graduation: May 2024

GPA: 4.9 / 5

Massachusetts Institute of Technology

Bachelor of Science in Computer Science and Cognition; Minor in Linguistics

Graduation: May 2023

GPA: 4.9 / 5

Relevant coursework: Natural Language Processing · Computer Vision (G) · Large Language Models · Artificial Intelligence · Deep Learning (G) · Spoken Language Processing (G) · Computational Cognitive Science (G) · Machine Learning · Laboratory in Psycholinguistics · Data Structures and Algorithms · Programming · Projects in the Science of Intelligence · Discrete Math · Linear Algebra · Probability and Random Variables

WORK EXPERIENCE

Artificial Intelligence Research Intern - Foxconn

June 2023 - August 2023

- Spearheaded project on AI driving assistant with multimodal vision-language models and LLMs
- Designed and implemented novel model architecture and dataset generation pipeline
- Jointly devised US and Taiwanese patents for the above (pending)
- Collaborated with Academia Sinica students to create related video demo for Hon Hai Tech Day 2023

Spoken Language Processing Student Researcher - MIT CPL

September 2022 - now

- Designed and implemented novel probing paradigm for self-supervised spoken language models
- Used Facebook AI's fairseq to quantify to what extent models incl. HuBERT exhibit human-like processing behavior
- Wrote [first-author paper](#) accepted to int'l spoken language processing conference [INTERSPEECH 2023](#)

Teaching Assistant - MIT 6.101 Fundamentals of Programming

September 2022 - now

- Taught class of 300+ students by helping solve/debug assignments and fostered good coding practices in weekly labs
- Led weekly staff meetings and taught 30+ fellow lab assistant staff best practices in helping students
- Jointly created and tested problem sets and maintained class server front-end and back-end

Natural Language Processing Research Intern - University of Chile

June 2022 - August 2022

- Co-authored [paper](#) on training word embeddings for Spanish clinical use published in int'l science journal *Frontiers*.
- Implemented NLP models for int'l computational linguistics competition ([SMM4H 2022: SocialDISNER](#)): scored 2nd place on eval metric. Co-authored corresponding [paper](#) published by *Association for Computational Linguistics*.

Computational Psycholinguistics Student Researcher - MIT TedLab

June 2020 - March 2021

- Used natural language processing techniques to quantify obstacles to comprehension posed by legal language.
- Developed scripts using Python NLP libraries (incl. NLTK, Stanza) to structurally parse texts and quantify difficulty.
- Culmination in [paper](#) published by international cognitive science journal *Cognition*.

SELECTED PROJECTS

Problem Solving with Large Language Models via Context Augmentation

April 2023

Devised and implemented a set of LLM context augmentation methods to improve performance at problem solving.

Speech to speech translation model

May 2022

Built novel speech to speech translation pipeline, wrote corresponding paper describing methodology.

Querying neural representations of language with EEG data

November 2021

Used novel EEG dataset from child epilepsy patients to investigate neural responses to linguistic features.

Grapheme to phoneme RNN model

May 2021

Built Pytorch-based LSTM models to predict the pronunciation of novel words given their spellings for arbitrary languages.

Analysis of positional distribution of Main Clause Phenomena

April 2020

Used Amazon's Mechanical Turk and implemented code in R to field experimental data and replicate psycholinguistics research paper on the distribution of certain grammatical structures.

SKILLS AND ACHIEVEMENTS

Foreign Languages

Japanese, French, Russian, Levantine Arabic, Spanish, Chinese; learning Vietnamese, Korean, and more

Coding Languages

Python, *nix/Bash, MATLAB, R, JavaScript, HTML/CSS, \LaTeX

Software & Tools

git, pytorch, sklearn, fastAI, numpy, pandas, Colab, cluster comp, Azure, Praat, Amazon MTurk

- Passed highest level (N1) of the international Japanese Language Proficiency Test (JLPT) in the 96th percentile (2017).
- Ron Brown Scholarship Scholar (2019-present).

- First Place in Russian Poetry Recitation, Second Place in Speech Contest at New England Olympiada of Spoken Russian at Harvard University (2020).