

Victor R Martinez

<http://victorrmartinez.me>

EXPERIENCE

Apple July 2021 - Present

Machine Learning Engineer | Seattle, WA

- Create groundbreaking technology for large scale systems, spoken language, big data and artificial intelligence
- Enhance and improve Siri through state of the art machine learning techniques
- Build an elegant user experience for a distributed system at massive scale
- Develop new features, maintain existing code, fix bugs and contribute to overall system design

Signal Analysis and Interpretation Lab (USC) Aug. 2015 - May 2021

Research Assistant | Los Angeles, CA | Advisor: Shrikanth Narayanan

- Formulated a multi-task learning model based on GRUs with attention to [predict violence, sexual and substance abuse ratings](#) from movie scripts, advancing the state-of-the-art classification F1 score by 16% (relative).
- Developed automated analysis tool for written-media content with a focus on identifying D&I opportunities (US Patent 10,956,679). Analyzed over 2,300 dialogues from 88 fictional characters for five production companies including Disney and NBCUniversal. Awarded the USC Stevens 2019 Technology Advancement Grant for prototype development.
- Developed [PyKaldi](#), an open-source Python wrapper for Kaldi speech recognition toolkit that provides seamless support for 21 C++ libraries through CLIF, NumPy and OpenFST. As of August 2021, PyKaldi has over 3,000 downloads from anaconda cloud, 800 stars and 200 forks in Github.
- Designed a privacy-preserving distributed system architecture to securely transfer audio features from session recordings of 40 therapists (over 1,235 recorded hours) using docker and Kaldi.
- Coordinated 6 Ph.D. students to deliver production-level code for an automatic large-scale transcription and quality evaluation system of psychotherapy.

Apple May 2020 - Aug. 2020

Machine Learning Intern | Los Angeles, CA | Murat Akbacak's team | Supervisor: Thomas Collins

- Analyzed auxiliary tasks and semi-supervised approaches to reduce the amount of labeled examples required to achieve start-of-the-art results in dialogue state tracking systems, decreasing the requirement of manual annotations by up to 40%.
- Integrated auxiliary tasks into state-of-the-art dialogue state tracking systems improving users' goal prediction accuracy by 23%.

Disney Research May 2019 - Aug. 2019

Research and Development Lab Assoc | Glendale, CA | Supervisor: James Kennedy

- Formulated a conversational model for multi-party conversations based on multiple simultaneous dyadic interactions. Implemented as a prototype with up to 6 persons simultaneously.
- Evaluated the satisfaction levels of participants when interacting with a virtual agent with memory vs. non-memory. Quantified the participants preferences for agents with memory as a 16% overall satisfaction increment.

EDUCATION

Ph.D. Computer Science	University of Southern California	2021
MSc. Computer Science	Instituto Tecnológico Autónomo de México	2015
BSc. Computer Engineering and Applied Mathematics	Instituto Tecnológico Autónomo de México	2014

SKILLS

Soft: Critical Thinking | Creativity | Communication
Hard: Machine Learning | Natural Language Processing | Statistics
Programming: Python | R | C++ | PyTorch | Keras | NLTK | spaCy | NumPy | Jupyter | Docker | EC2 | Mturk
Research: Authored or co-authored 20 peer-reviewed publications in AAAI, EMNLP, ACL, PLoS among others