

Iroro Orife

AUDIO DSP, SPEECH · RESEARCH ENGINEER

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Objective

An applied research & software development role in audio, speech or natural language processing

Skills

Languages	Python, C/C++, Objective-C, Java, bash, LaTeX, Scala, MATLAB
DSP	Fourier Analysis, IIR/FIR Filter Design, segmentation, MIR features, source separation
Speech	Training LVCSR models in Kaldi (DNN-HMM, LF-MMI), n-gram LMs, building labeling & model scoring tools
Audio	Solid knowledge of audio codecs, effects, mixing, psychoacoustics, audio production & post-production
Machine Learning	DNN, RNN & seq2seq modeling in Tensorflow, Keras & PyTorch, clustering & classification, PCA/ICA/NMF
Misc. Computing	CoreAudio, AudioUnit, Stagefright/Audioflinger, SIMD optimization work (ARM, NEON), AWS EC2 (ELB, ASG)
Intangibles	I ship! Fast learner with strong engineering communication, team work ethic & emotional intelligence

Experience

Marchex

STAFF ENGINEER

Seattle, WA

Sept. 2014 - PRESENT

- Applied research (from prototype to production) in spontaneous conversational speech recognition
- Audio DSP algorithm development for language & Telephony SPAM identification
- Acoustic & Language model corpus preparation. Labeling tooling, scoring & data pipeline development
- Training of custom DNN-HMM models in Kaldi, Experiments with E2E ASR
- AWS EC2 deployment via auto-scaling groups. 24/7 on-call support of fleet processing 1M calls/day
- **Patents Issued: US 9,485,354** (2015) Identifying call features and associations to detect call traffic SPAM

Dolby Laboratories

STAFF AUDIO APPLICATIONS ENGINEER

San Francisco, CA

Jan. 2012 - Aug. 2014

- Worked on embedded systems implementations/ports of Dolby's perceptual audio coding & audio post-processing
- Algorithms included: Hybrid complex QMF, MDCT, spectral extension, Adaptive hybrid transform (AHT)
- Dialogue clarity, surround virtualization, volume leveling & bass enhancement
- Mentored junior engineers & regularly lectured on Dolby's audio-dsp algorithms to APAC FAE staff.

Apple

SENIOR AUDIO SOFTWARE ENGINEER

Cupertino, CA

Feb. 2006 - Nov. 2011

- **2006 - 2009:** Developed system level audio & effect processing tools for Soundtrack Pro v2, Final Cut Studio 2 & 3.
- Integrated & maintained Logic Pro audio effects within the STP Audio-Unit hosting environment.
- Collaborated with core-audio team on optimizations to their resampler and audio analysis algorithms
- **2010-2011:** Developed & shipped an auto-synch feature for ingested media & an audio file configuration classifier for Final Cut X
- Integrated & maintained custom 64-Bit versions of Logic Pro audio effects within the FCP X Audio-Unit hosting environment
- **Patents Issued: US 8,621,355** (2013), **US 8,842,842** (2014), **US 8,929,561** (2015)

2KSports

AUDIO SOFTWARE ENGINEER

San Rafael, CA

May 2005 - Jan 2006

- Developed C/C++ tools & libraries for the XBOX360 launch of NBA2k6, NHL2k6, College Hoops 2K6
- Performed support tasks to game development teams using the audio library

Education

Dartmouth College

A.M. IN MUSIC COMPOSITION (ELECTRO-ACOUSTIC MUSIC)

Hanover, NH

Sept. 1999 - June. 2001

- Coursework: Composition, Harmony, History, Aesthetics, Psychoacoustics, Timbre, Signal Processing & Systems of Musical Thought
- Teaching Assistant for undergraduate Composition courses
- Recording engineer for university concerts

Carnegie Mellon University

B.SC. IN ELECTRICAL AND COMPUTER ENGINEERING, WITH A DOUBLE MAJOR IN MATHEMATICS/COMPUTER SCIENCE

- Microsoft Full Tuition Scholarship
- Undergraduate mathematics tutor
- NCAA III Tennis, varsity letters
- Dean's List

Pittsburgh, PA

Sept. 1993 - May. 1997

École polytechnique fédérale de Lausanne (EPFL)

3RD YEAR EXCHANGE STUDENT IN COMPUTER AND COMMUNICATION SCIENCES

- Highlight: Signal Processing course with Martin Vetterli
- Extracurricular courses in French Literature & Film

Lausanne, Switzerland

July 1995 - August 1996

Publications

- 2018 **Attentive Sequence-to-Sequence Learning for Diacritic Restoration of Yorùbá Text**, INTERSPEECH
- 2018 **Audio Spectrogram Factorization for Classification of Telephony Signals**, arXiv
- 2017 **Semi-Supervised Model Training for Unbounded Conversational Speech Recognition**, arXiv
- 2009 **Introduction to Digital Signal Processing (review)**, Computer Music Journal
- 2001 **Riddim: A Rhythm Analysis Tool Based On Independent Subspace Analysis**, MA Thesis

Extracurricular

Institute of Electrical and Electronics Engineers (IEEE) & Audio Engineering Society (AES)

MEMBER

Jan 2012 - PRESENT

- Participant in local events for networking & career development tools opportunities as well as digital library access

The Society for Electro-Acoustic Music in the United States (SEAMUS)

MANAGING EDITOR OF JOURNAL SEAMUS

2008 - 2012

- Coordinated & edited manuscript submissions
- Wrote reviews of select musical works and organized feedback from the paper-review panel
- Proposed ideas for articles, kept staff on schedule and answered to the Editor-In-Chief

Unicode Common Locale Data Repository (CLDR) Project

CONTRIBUTOR

2007-2008

- Contributed a wide selection of Yorùbá language data in order to make the language usable in a wider variety of products

Natural Languages

French

FULL PROFESSIONAL PROFICIENCY, WRITTEN & SPOKEN

- University of Lausanne coursework in Literature & Film
- ILR proficiency of 4+

Yorùbá

CONVERSATIONAL PROFICIENCY

- Junior secondary school reading/writing level

Spanish

BASIC PROFICIENCY

- Fulfill traveling needs & conduct myself in a polite manner

References

Jon Appleton - Professor Emeritus, Dartmouth College

Jeremy Holland - Director of AI Research, Apple, Inc.