

## ALLAN PENG

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### WORK EXPERIENCE

#### **Mod9 Technologies**

*Software Engineer*

*Spring 2018-Present*

- Lead development on multi-threaded Speech Recognition server, using C++, Boost, Asio, and Kaldi. The scalable server can process hundreds of concurrent audio streams at state of the art accuracy.
- Manage product releases, interface with clients, and write public-facing documentation.
- Built parallelized speech recognizer that transcribes audio up to 400x faster than real time.
- Implemented new speaker diarization (segmentation) system, using clustering and HMM-GMM models. The new system improved diarization error rate from 15% to 4%.
- Trained HMM-DNN models to transcribe English and Spanish using Kaldi.
- Designed finite state transducer that recognizes all possible pronunciations of American phone numbers.

#### **UC Berkeley RISELab / AMPLab**

*Research Engineer*

*Spring 2017 – Winter 2017*

- Research on distributed computing on serverless cloud infrastructure (AWS Lambda).
- Migrated and benchmarked Pywren project on different cloud infrastructures: Google Cloud & Azure.

#### **Facebook**

*Engineering Intern, Internet.Org Scalability Team*

*Fall 2015*

- Worked on i.org traffic monitor, a debugging tool for Android engineers on iorg team.
- Developed functionality for engineers to test Facebook products (FB-Lite, Free Basics, Native) on various carrier infrastructures from different countries.

### TECHNICAL SKILLS

*Languages:* Python, C, C++ (Boost), Go (Golang), Bash, Java

*Technologies:* Linux, Kaldi, LaTeX, Docker, AWS, Google Cloud, OpenFST

### PROJECTS

*Paxos-based Distributed Datastore (Golang)*

- General purpose Paxos library, and sequentially consistent partition-tolerant distributed datastore

*Voice-Controlled Autonomous Guitar (Raspberry Pi, Python)*

*([www.allan.expert/guitar](http://www.allan.expert/guitar))*

- Embedded system built with an array of solenoids held over the frets and strings of an acoustic guitar
- Built speech recognition interface to start, stop and choose songs, using Google Cloud APIs.

*Linux Firewall (Python)*

- Stateful packet filter for Linux. Filters based on IP subnet, DNS, or geo-location
- Implemented DNS redirects, TCP resets, and logging HTTP transactions

### EDUCATION

**University of California, Berkeley**

B.A. Double Major: Applied Mathematics & Computer Science, Regents & Chancellor's Scholarship

**London School of Economics**

International Relations & Law