

# Jason Thai

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## Education

### The University of Texas at Dallas

Master of Science, Electrical Engineering

May 2020

GPA: 3.8/4.0

### The University of Texas at Austin

Bachelor of Science, Computer Engineering

May 2018

GPA: 3.7/4.0

## Work Experience

### R&D Engineer, Vocalife LLC.

2019 – Present

- Image Classification, Object Detection, Keyword Spotting, and Noise Separation.
  - Research and modified open-source neural network models for specific tasks.
  - Constructed and trained machine learning models using Tensorflow.
  - Wrote Python scripts to automate dataset generation, feature extraction, and model training.
- Implemented real-time, audio processing code for an iOS application in Objective C.
  - Synchronized multiple threads and buffers using semaphores.
  - Generated a Tensorflow Lite neural network for mobile inference.

### Engineering Intern, Applied Research Laboratories

2017

- Signal Analyzer
  - Created a signal analyzer using LabVIEW coupled with a PCI-4461 to acquire, process, and generate signals.
  - Implemented measurements, such as zoom FFT, swept sine analysis, and limit testing.
- Real-Time Clock Synchronization and Temperature Compensation
  - Produced an embedded software solution to synchronize and compensate frequencies of multiple oscillators.
  - Designed a simple proportional controller to adjust the clock's counter based on DIO pins toggled by the clock.
  - Utilized LabVIEW and environmental chamber to generate a lookup table and test system's yearly time drift.

## Projects

### Seismic Data Analysis (In Progress)

2020

- Writing Python scripts to train a convolution neural network to perform Facies classification on seismic data.
- Plan to perform simple online data augmentation and weighted loss function to counteract class imbalance.

### Online Self-Supervised Speech Denoising

2019

- Created a Matlab GUI to collect data, train a network, and output denoised audio in real-time.
- Performed speech denoising using a mid-side microphone and convolutional neural network.

### Speaker Identification using Ensemble Technique

2019

- Designed and trained neural networks to perform speaker identification on the Fearless Steps dataset.
- Utilized convolutional neural networks for speaker recognition and a deep neural network for decision making.

### Designed Exploration using High-Level Synthesis

2019

- Wrote a C program to implement Ant Colony optimization for design space exploration.
- Used CyberWorkBench to perform High Level Synthesis and acquire performance results.

### Robot Car

2018

- Designed a robot capable of navigating a track using a microcontroller coupled with motors and sensors.
- Implemented a basic embedded real-time operating system capable of managing multiple threads and processes.

### Music Equalizer

2016

- Implemented a digital filter bank to isolate and modify the amplitudes of multiple frequency bands in Embedded C.
- Created an embedded system using a printed circuit board with an ARM CPU, speaker, switches and knobs.

## Skills

Test and Measurement: Oscilloscope, Logic Analyzer, Signal Generator

Software Languages: Objective-C/C, Python, Matlab