Xiaoran Li

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EDUCATION

University of California, Irvine Irvine, CA
Master of Science, Electrical Engineering *June 5th, 2019*
***Thesis**: Low-Latency MapReduce* GPA:3.238/4.0
Selected Coursework: Digital Communication, Neural Network, Adv System Security, Information Theory, Algorithms

University of California, Irvine Irvine, CA
Bachelor of Science, Electrical Engineering *June 2017*
Selected Coursework: Digital Communication, Image Processing, Signal Processing GPA:3.264/4.0

SKILLS

Programming/Scripting Language: (Proficient)Python; (Familiar)C, MATLAB, HTML, MySQL, and Mathematica

Frameworks and tools: Distributed File system, Hadoop, Apache Spark, Git, OpenCV, CNN in DeepLearning, Tensorflow, PyTorch, Keras, Linux, Operating System, LaTex, MapReduce, Amazon Web Services(AWS), Parallel Computing, Algorithm Design, Cloud Storage, Information Retrieval, Data Analytics, and Data Structure.

THESIS

University of California, Irvine Irvine, CA
Low-Latency MapReduce *Sep.,2017 - June 2019*

- Studied the fundamental problem of storing evolving information in distributed network systems through coding-based distributed computing for such environments like AWS, GFS, HDFS, etc..
- Used an application (in Python Spark) to create multiple versions of a message are be written to a storage network and used distributed algorithm to find the minimum cost in terms of storage and communication size in linear exponential decay function. Used the function to find the unique solution for the most efficient network to handle large-scale data system.
- Built an application (in Python) to create multiple version of distributed storage network and based on the communication bandwidth and distributed algorithm to find appeared time for the keywords in the network in terms of storage and communication size and plot in linked graph then list the top popular result from each network

PROFESSIONAL EXPERIENCE

Western Digital Irvine, CA
Software Engineering Intern *June – Sep, 2018*

- Interned with the eSSD group for developing new generation of SSD
- Reduced the running time for SSD engine program by 30 seconds out of 3 minutes by analysis the data output summary

University of California, Irvine Irvine, CA
Undergraduate Research Assistant Feb. 2015 – Sep., 2017

- Designed and fabricated multiple versions of the wrinkled structure in wearable devices
- Built an application (in Python, LabVIEW, and MATLAB) to monitor and calculate human's health such heartbeat, heart pressure, even be able to track human motions.

California Institute of Technology Pasadena, CA
Undergraduate Research Assistant Sep. 2013 – Sep., 2014

- Followed the instruction to prepare the experiment and collected the data after finished gun cannon experiment
- Implemented a Matlab code to find linear regression line for the best parameter to support collision experiment

ACADEMIC PROJECTS

Hand Gesture in Deep Learning by Using MapReduce Irvine, CA
University of California, Irvine Winter 2019

- Implemented a classifier in a distributed store network to handle image processing for large datasets
- Created over 3000 images and trained over 1000 images in each network
- Exceeded the test accuracy of 98% by using 11-layer CNN the result is significantly better than ResNet 50 and Kernelized (RBF) SVM by 10% of accuracy.

Network Security Defender Irvine, CA
University of California, Irvine Winter 2019

- Built an application (in Python) for a distributed storage network for three users for ReCaptcha technology and crashed one of the networks. The security system goes through the ReCaptcha with trained accuracy of 98% by using 11-layer network of deep learning and erasing the bad source from the network then using other networks to repair the crashed network

16-QAM Encoder Irvine, CA
University of California, Irvine Winter 2018

- Implements a code (Matlab) to calculate the bit error rate based on grey coding given AWGN (Additive white Gaussian Noise) noise for PSK and FSK.
- Calculated the bit error rate of a LDPC code with the input of AWGN

Speech Recognition Irvine, CA
University of California, Irvine Winter 2016

- Implemented a Matlab code to study the speech and classify different input voices by using linear regression and reach the accuracy of 98%.
- Implemented a C code for TI board for verification the realistic the input voices.

Autonomous Vehicle (Senior Design) Irvine, CA
University of California, Irvine Fall 2016

- Designed and implemented an Arduino vehicle with multiple ultrasonic sensors and a web-camera for achieve multiple tasks such merge line during traffic, left/right turn, stop at traffic light or stop sign.
- Implemented a C code to find the edge of colors and use linear classification to find traffic lights and stop sign

Movie Lab Irvine, CA
University of California, Irvine Winter 2019

- Implemented a program (C) to enhance the performance of the digital image processing operations in movie stream which can play forward or backward
- Implemented a program (C) to change the image to increase the gray level determined by the edges of the image

CONFERENCE & AWARD

Elevator Talk: 3rd Annual Southern California Micro & Nanofluidics 09/2016
First science cup for Olympic innovation competition (First Prize) Oct. 2007
FIRST VEX Challenge Excellent Team (Team Leader, 2nd in the world) Apr. 2007