

Xue Zheng

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RESEARCH INTERESTS

Machine Learning, Optimization, Federated Learning.

EDUCATION

The Ohio State University

M.Sc., Electrical and Computer Engineering (expected to graduate in December 2021)

Advisor: Parinaz Naghizadeh

Relevant Coursework: Machine Learning, Data mining, Probability and Random Variables.

Columbus, OH

Jan 2020 - Present

Harbin Institute of Technology at Weihai

B.Eng., Information and Electrical Engineering

Major: Automation

Awarded Academic Progress Scholarship Award in 2017

Awarded Merit Student Award of Harbin Institute of Technology in 2016

Awarded The Third Prize Scholarship Award in 2015

Sep 2014 - Jun 2018

RESEARCH EXPERIENCE

The Ohio State University

Master's Researcher

Working Paper: Decentralized Multi-Agent Learning with Heterogeneous Agents

Advisor: Parinaz Naghizadeh

- Developing algorithms for decentralized learning as an alternative to centralized Federated Learning
- Applied by a directed graph to enable personalized learning
- Designed an algorithm to learn the directed collaboration graph
- Tested on Fashion MNIST dataset

Columbus, OH

Mar 2021 - Present

Harbin Institute of Technology at Weihai

Undergraduate Researcher

Quantitative Photoacoustic Imaging Algorithm Based on Sparse Decomposition

- Recovered absorption coefficient through photoacoustic image obtained from simulation
- Updated algorithm for dictionary training by means of K-SVD dictionary
- Decomposed original signals by orthogonal matching pursuit algorithm and recovered absorb coefficient and luminous flux through signals after decomposition
- Wrote program by means of MATLAB

Weihai, ShanDong

Jan 2018 - Jun 2018

SELECTED PROJECT EXPERIENCE

Voice-Controlled Home Automation

Team member

- Used Bluetooth of the cell phone to control the devices
- Bluetooth signal was sent by cell phone and received by Arduino
- The devices were controlled by Arduino
- Wrote software of phone by Java and of Arduino by C

Columbus, OH

Sep 2020 - Dec 2020

OSIAC Machine Instructions Design

Personal project

- Implemented the machine instructions of OSIAC machine by microinstructions
- Wrote programs on Linux virtual machine
- Including 8 double operand instructions, 6 single operand instructions, 6 branch instructions, and 3 special instructions

Columbus, OH

Jan 2020 - Apr 2020

Segmentation and Conversion of Handwritten Number and Letters

Personal project

- Segmented numbers and letters from a picture

Weihai, ShanDong

Sep 2017 - Dec 2017

- A series of letters and numbers entered from the keyboard will be converted into a picture composed of segmented numbers and letters
- Wrote program by MATLAB

Tracking Car

Team member

Weihai, ShanDong

May 2017 - Jun 2017

- Determined and corrected routes of the car by infrared sensing device; controlled the motor by single-chip microcomputer
- Wrote control program by C language and performed commissioning to the object

Automatic Door Design Based on Verilog

Personal project

Weihai, ShanDong

Jul 2016 - Aug 2016

- Design the automatic door that can be induced by a passerby to open, close, and output images and voice.
- Programmed control program by Verilog and bottom-up design

TEACHING EXPERIENCE

Teaching Assistant of Computer Architecture and Design (ECE 5362)

Electrical and Computer Engineering Department

Columbus, OH

Aug 2021 - Present

- Scored homework and machine problems
- Answered questions of homework and machine problems for students during office hours

PROGRAM SKILLS

- Python
- Java
- Matlab
- C
- Verilog
- Assembly language

GRE SCORE

Tested on November 23, 2018

Verbal Reasoning: 147

Quantitative Reasoning: 170

Analytical Writing: 3.0

SELECTED AWARDS and RECOGNITIONS

Academic Progress Scholarship Award 2016 - 2017	2017
Merit Student Award of Harbin Institute of Technology 2015 - 2016	2016
The Third Prize Scholarship Award 2014 - 2015	2015
Second Prize, Campus Electronic Design League Match	2015