MINGZHAO LIU

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EDUCATION

Rice University — Houston, Texas, The U.S.

Electrical and Computer engineering，Master of Electrical engineering — Sep. 2020 - Current

- Current GPA: 3.6/4.0
- Relevant Courses: Intro to Machine Learning, Data Structure and Algorithms, Data science capstone (Houston fire department), A practical intro to Deep learning, Computer system architecture

Dalian University of Technology (DUT) — Dalian，Liaoning, China

Optoelectronic information science and engineering, bachelor's in science — Sep. 2016 – Jul. 2020

- Relevant Courses: Principle of Single-Chip Microcomputer, Probability and Statistics, Mathematical Analysis in Engineering

PUBLICATIONS

1. Zhang Lili, Zhenkun Zhang, Mingzhao Liu, Jun Liu and Yi Sha "Design and Implementation of Parking Lot Charge Management System Based on Deep Learning Technology", Under Review, *Experimental Technology and Management*
2. Yasheng Wu, Mingzhao Liu, Chengyi Cui, etc. "Design of Digital Identification Device Based on FPGA" Accepted, *2020 the 10th International Workshop on Computer Science and Engineering (WCSE 2020)*

RESEARCH EXPERIENCE

Parking Lot Charge Management System Based on Deep Learning Technology — Jul. 2019 – Sep. 2019

Member of Research Group in Deep Learning Lab

- Collaborated in designing and building our LetNet-5 model and determining the parameters of it
- Collected the image dataset for training the model and monitoring the training results of our model
- Developed the front-end user Interface with Tkinter (in Python)
- Finally developed a mobile application with Python which can recognize the license plate with 90% accuracy, recognize the car brand with the API of Baidu cloud, and calculate the parking fee of the car.

Design of Digital Identification Device Based on FPGA — May. 2019 – Oct. 2019

Member of Research Group in Electrical Engineering Lab

- Collaborated in the brainstorm of the FPGA-based digital identification device design
- Built the Convolutional Neural Network (CNNs) in the Vivado development environment using Verilog (a hardware description language)
- Captured real-time video data stream with the screen of CMOS image sensor OV7670 during the experiment
- Achieved the recognition and displayed of a single monochrome number and reduced the recognition time to under 5ms; Concluded the rial result into thesis of *Design of Digital Identification Device Based on FPGA*

INTERNSHIP EXPERIENCE

Huawei — Dec. 2020 – May 2021

Software Development Intern

- In charge of utilizing the self-developed full stack tuning system based on Python to tune the database parameters in the server, such as MySQL and PostgreSQL, and investigating the GUC parameters of Gaussian database to judge the accuracy of the tuning system
- Responsible for Developing new and stable features, such as configurator and executor needed by Gaussian database in the tuning system and making test cases to tune automatically in the Linux environment
- Utilized the web interface to discover the influence of different database parameters on the benchmark performance tested by TPC-C system
- Developed the configuration and executor file in Python to operate the master instance for the tuning system, which can run the test calculation samples of OpenMpi (cluster communication system owned by Huawei) , such as Lammps and Osu
- Analyzed the whole process of Netdata (open-source environment monitoring tool), such as collection, storage and dashboard display, and deployed the tool to the Linux environment
- Developed a variety of Plug-ins in Python language in Netdata, such as Intel PCM and IPMI plug-ins
- Developed the interfaces required by Netdata with Promscale and Prometheus, and imported the data collected by Netdata collectors to PostgreSQL for subsequent processing
- Collaborated in analyzing and designing the structure of database for the data collected from Netdata collectors with teammates

PROGRAMMING SKILLS

Familiar with object-oriented languages, such as Python and Java

Obtained real-world working experience with Python and libraries such as NumPy, Pandas and Matplotlib

Gained research experience on computation projects during the college with MATLAB

Proficient in Data structure and classical machine learning algorithms

Proficient in creating the pipeline of a data science project and building the model