Zhengqi(Drago) Dong

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EDUCATION

Boston University, College of Engineering, Boston, MA (GPA: 3.92/4.0) **Expected 12/2022**
MS in Robotics & Autonomous Systems
The Ohio State University, College of Engineering, Columbus, OH (GPA: 3.67/4.0) **05/2021**
B.S Computer Science Engineering (Minor in Statistics)
Graduated with Honor in Engineering, and Honor Research Distinction in Agricultural Engineering

Related Coursework: Medical Robotic, Robotic Autonomous System, Machine Learning, High-performance Deep Learning, Natural Language Processing, Computer Vision, Algorithm & Data structure, Operation System, Networking, Information Security, Web Development, Probability & Statistic, Statistical Modeling, Excel and Access, Analog & Digital Circuits

WORK EXPERIENCE

BU Spark!, Boston, MA, United States 09/2021 - 01/2022
Software Developer Intern
- Created a website that loads mutual aid resources from Postgres database, then displays all food resources and mutual aid locations around Greater Boston area in an interactive map by using mapbox API.
- Designed and developed the front-end in Gatsby to improve user experience by adding multi-language feature.
- Deployed frontend via GitHub Pages with https secure access, and utilized Docker Compose to containerize back-end application, then deployed on AWS EC2 instance, and secured the communication between frond-end and backed with TLS/SSL certificate.

The Ohio State University, Columbus, OH, United States 08/2020 - 05/2021
Student Instructional Assistant
- Teaching assistant for CSE 3461 (Computer Networking and Internet Technologies), supervised by Prof. Jim Vickroy.
- Hold weekly office hours, oversaw lab sections, and answered students' questions regarding homework and labs.

PROJECTS AND RESEARCH

Multi-threaded MapReduce Emulator (Multithreaded programming, C, Makefile, Valgrind): 01/2021 - 05/2021
- Created and implemented a multi-threaded version of MapReduce Emulator for counting the number of occurrences of words for a given file, which potentially can be used for search engines or web crawlers in text processing.

Deep-Learning Based Plant Disease Detection (Python, TensorFlow, Slurm/PBS scheduler): 06/2019 - 12/2020
- Awarded $5500 scholarship by proposing an image-based deep learning approach and application framework design for plant leaves disease detection.
- Compared pros and cons between machine learning and deep learning-based detection.
- Conducted sequences of experiments on multiple factors including train-validation split ratio, batch size, and complexity size of pre-trained models, which resulted in 99.5% and 98.11% accuracy in training and validation respectively.
- Completed "Honors Research Distinction" thesis by authoring and presenting multiple deliverables works of literature, including over 70+ pages thesis, presenting a poster in two research forums, and oral defense presentation

SKILLS

Programming languages: Python(Django, Flask, PyTorch, and certified Google TensorFlow Developer), and C (GDB, Valgrind, Makefile), R(tidyverse and shiny), Java, Ruby(Ruby on Rails), SQLite, X86 Assembly Language, HTML, CSS(Bootstrap), JavaScript(React.js, Gatsby, Prisma), MATLAB, Bash Script, LaTeX
High-Performance Computing Techniques: Code Optimization (e.g., loop parallelism, reassociation, blocking), Multiprocessor Optimization (e.g., Pthread, OpenMP, SSE/AVX intrinsic SIMD vectorization), GPU Optimization (e.g., CUDA programming), Distributed System (e.g., Slurm/PBS scheduler, MPI), Deep Learning Optimization (e.g, model/data/hybrid parallelism, LBANN, Horovod, Dask)
Software Techniques: Linux, GitHub, AWS(Cloud 9, EC2), Docker, Heroku, Postman, CAD(SolidWorks)
Robotic Techniques: ROS, SLAM, Jetbot, Jetson nano, Arduino, Milling, 3D Printing

ACADEMIC COMPETITION

2019 RoboMaster Competition at Shenzhen: launched OSU first-year competition, cooperated with AI team members to develop customized infantry fighting vehicle Object Detection model with Yolo-v3 algorithm.
2018 IEEE SAC Micromouse competition at Pittsburgh University: Coded DFS/BFS/Uniform cost/A* search algorithm with Python on Micromouse robot to search the shortest path in a maze.

HONORS AND AWARDS

- Dean's List (>3.5 GPA) over five semesters and graduated with Honor Research Distinction.
- Awarded 2020, 2021 IEEE Excellent Service Award, active IEEE members (Student Member, 2018–Present).
- Awarded Table Tennis Team Champion at 2018-19 NCTTA Midwest Tournament.