Zhengqi (Drago) Dong

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EDUCATION

Boston University, College of Engineering, Boston, MA (GPA: 3.9/4.0)   **Expected 12/22**
MS in Robotics & Autonomous Systems
The Ohio State University, College of Engineering, Columbus, OH (GPA: 3.67/4.0)   05/21
B.S Computer Science Engineering (Minor in Statistics)
Graduated with Honor in Engineering (29/317), and Honor Research Distinction (4/317)

Related Coursework: Medical Robotic, Soft Robotic, Motion Planning, Machine Learning, High-performance Deep Learning, Natural Language Processing, Computer Vision, Algorithm & Data structure, Interpreter & Compiler, Operation System, Networking, Information Security, Web Development, Database Systems, Probability & Statistic, Analog & Digital Circuits

WORK EXPERIENCE

Software Engineer Intern, Yrobot lnc, Boston, MA, United States   06/22 - 09/22
- Designed and developed a File Transferring Simulator for company's embedded system of wearable devices.
- Wrote C++ code for dev board and Python for client endpoint that can communicate via TCP and X/Y/ZMODEM protocol
Software Developer Intern, BU Spark!, Boston, MA, United States   09/21 - 01/22
- 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.

PROJECTS AND RESEARCH

Deep-Learning Based Plant Disease Detection (Python, TensorFlow, Slurm/PBS scheduler):   06/19 - 12/20
- Awarded $5500 scholarship by proposing an image-based deep learning approach and application framework design.
- Compared pros and cons of approaches between machine learning and deep learning-based detection.
- Conducted sequences of hyper-parameter tunning to improve the result, including train-validation split ratio, batch size, and complexity of pre-trained models, and resulted in 99.5% and 98.11% accuracy in training and validation respectively.
- Completed "Honors Research Distinction" thesis over 70+ pages and presented the result at two research forums.
Multi-threaded MapReduce Emulator (Multithreaded programming, C, makefile, Valgrind):   01/21 - 05/21
- 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.

SKILLS

Programming languages: Python (Django, Flask, PyTorch, and certified Google TensorFlow Developer), and C/C++ (GDB, Valgrind, Makefile, gprof), Ruby (Ruby on Rails), Java, R (tidyverse and shiny), X86 Assembly Language, HTML, CSS(Bootstrap), JavaScript (React.js, Gatsby, Prisma), MATLAB, SQLite, 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, Orb-SLAM, visual odometry, object detection, Jetbot, Jetson nano, Arduino, 3D Printing.

LEADERSHIP & EXPERIENCE

Student Instructional Assistant (CSE3461, Networking), The Ohio State University, Columbus, OH   08/20 - 05/21
WebMaster, IEEE at OSU Undergraduate chapter, Columbus, OH   01/18 - 05/21
Vice-president, OSU Table Tennis Club, Columbus, OH   05/19 - 05/20

ACADEMIC COMPETITION

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.
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.

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.