Honglei Liu

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EXPERIENCE

EXSCALLAB | Research Assistant
Jan 2020 – May 2020 | Stony Brook, NY

- Read LLVM/OpenMP documentations and source codes. Determine the part to optimize.
- Optimize the omp_target_memcpy() functionality by enabling new variables in *runtime* library and *device* library to represents vendors of GPUs and introducing additional conditions when vendors of GPUs are the same.
- Further optimize the functionality by finishing the GPU vendor check in runtime level instead of the API level. Offer support to make sure the modification is bug-free before LLVM accepts the modification.

XINDA SCI&TECH CO., LTD | Hardware Engineer Intern
Jun 2018 – Aug 2018 | Baotou, China

- Design 220A/50Hz AC to 4V/2A DC charger for intelligent heat meter.
- Simulate given circuits on *Altium* with noised DC input. Test the reliability of the circuits under various conditions and record failure rate of the circuits. Perform tracing with *EAGLE* and determine the inappropriate design in circuits.

PROJECTS

P2 CHARGING SYSTEM | Graduate Student Research
Aug 2020 – Present | Stony Brook, NY

- Go through provided papers to have a brief understanding to the formulas we need.
- Rework the current simulation program to meet the needs of NYC taxi data sets.
- Gather electricity and charging station information using the API provided by con-Edision and PSEG website.

TURN-BASED STRATEGY GAME | Personal Project
May 2020 – Aug 2020 | Lake Grove, NY

- Construct game board and entities in JSON format. Build Turn-Based game and Enable mouse clicking information by importing the pygame module.
- Design an A-star search algorithm and multiple AI characters that can move under the distance constraint. Build state machine that can transfer between win/lose/player_turn/AI_turn.

CUDA TEMPLATE MATCHING | Course Project
May 2019 - Jun 2019 | Davis, CA

- Record the usage of memory and time for template matching in CPU implementation.
- Design algorithm the realize the same functionalities but calling GPU for pixel comparisons. Expand the naive function to shared-memory one. Store the entire graph in shared memory and modify the existing algorithm so that every block can access and use the shared memory.
- Resize the shared memory block to avoid memory overflow.

EDUCATION

STONY BROOK UNIVERSITY, SUNY
Master of Science in Computer Engineering
Expected Dec 2020 | Stony Brook, NY
Cum. GPA: 3.6 / 4.0

UNIVERSITY OF CALIFORNIA, DAVIS
Bachelor of Science in Computer Engineering
2015 - 2019 | Davis, CA
Cum. GPA: 3.0 / 4.0

SKILLS

PROGRAMMING
4+ years:
Python • C/C++
1+ years:
Java
0+ years:
Matlab • Golang

TECHNOLOGY
Git/Github • AWS • Linux
UNIX • Embedded System
Machine Learning • Operating System

COURSEWORK

GRADUATE
Analysis of Algorithms
Wireless Network
Machine Learning

UNDERGRADUATE
Operating System
Embedded System
Data Structures and Algorithm
Probabilistic Analysis
Digital/Analog Circuit

LINKS

Github:// **Honglei**
LinkedIn:// **Honglei Liu**