Haoquan Long

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Address: University of Science and Technology of China, Hefei, Anhui, China

EDUCATION

University of Science and Technology of China(USTC), Hefei, CN Sept. 2021 - present

School of gifted young, Bachelor of engineer in computer science

GPA: 3.78/4.3, 88.49/ 100

Coursework: Linear Algebra(95/100),Probability Theory and Mathematical Statistics(90/100) Mathmatic Analysis(90/100), Data structure (95/100)

Principles and Techniques of Compiler(95/100), Operating System(95/100) ,Introduction to Computing Systems(95/100), Computer Organization and Design(93/100), Data Structures(96/100),

Computer Programming in C (95/100), Python for scientific programming(A, top 10),

English Ability: TOFEL (106/120) GRE(327/340) CET-6(541)

Awards:

Freshman scholarship 2021

Second Prize (4th Place) in the Jianmu Cup Compilation Competition 2024

Scholarship Silver Award for outstanding students (11%) 2022

ACADEMIC EXPERIENCE

Attention Mechanism in Short Video Understanding , USTC, Hefei, CN July 2023 - Dec.2023

Advisor: Professor Wang xiang

- Studied Deep Learning (Andrew Ng) and Computer Vision (Stanford CS231n),completing a series of accompanying experiments.
- Implemented Transformer for English-German translation, Vit-encoder for image classification, and MoE -decoder for generating Shakespearean-style text using pytorch.nn, becoming proficient in PyTorch.
- Reproduced a lab paper, MSPAN, which addresses the scenario of "answering multiple-choice questions based on videos." I processed and integrated the new dataset NextQA into the paper's model.
- Revised the loss function, resolved the issue of the new dataset not converging, and achieved a 50% accuracy rate.

Jianmu Cup Compiler Competition, USTC, Hefei,CN Feb. 2024 - May. 2024

Advisor: Professor Cheng Li

- Translated Sysy language into LoongArch assembly code successfully, passing all organization tests (the only team to score full marks in correctness), with an average compilation time double that of industrial standards (GCC).
- Contributed over 3000 lines of code personally.
- Implemented translation from all LLVM-IR-based frontend codes to backend codes.
- Completed register allocation optimization, achieving an average performance improvement of 2.17 times compared to the baseline algorithm (stack allocation).

Traing Free Method Speed up Stable Diffusion , MSRA, online April. 2024 - Now

Advisor: Professor Qiu Lili

- Ran stable-diffusion successfully on a 3090-24G machine, learning the principles and structure of diffusion.
- Researched acceleration methods such as token-merging, quantimazition and token-prune.
- Thoroughly studied the token-merging method, reproduced it, and identified some shortcomings through observation of the reproduction results.
- Proposed an enhancement for token-merging, implemented the code, and received approval from Professor Qiu. I am still conducting performance optimization experiments to this day.

SKILLS

Programming Languages: C, Python (Pytorch,django), matlab, verilog, C++,sql,