LAN LU

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EDUCATION

Southern University of Science and Technology, Shenzhen, China Sep.2018 - Present

Bachelor in Computer Science and Engineering (CSE), expected June 2022

GPA: 3.91/4.00 Rank: 1/153

EXPERIENCE

Research Assistant, Southern University of Scienceand Technology Sep.2020 - Present

Worked on **similarity search** for large-scale datasets supervised by Prof. Bo Tang

Teaching Assistant, Southern University of Science and Technology Jan..2021 - Jun.2021

Assisted in teaching the course Java programming

RESEARCH PROJECT

Efficient Maximum Inner Product Similarity Search Nov.2020 - Present

Research Project Supervisor: **Prof. Bo Tang** and **Prof. Xiao Yan**

To speed up the large-scale maximum inner product similarity search, we propose a CPU-GPU hybrid system which achieves both short query processing time and high result quality.Compared with FAISS, this system has significantly shorter query processing time at the same recall.

- Provide **norm-based** pruning according to Cauchy-Schwarz inequality
- Implement **residue-based** pruning from RQ technique
- Realize and prove **hash-based** pruning

RESEARCH PUBLICATION

Accelerate Maximum Inner Product Search with GPU

Author: Xiao Yan, Long Xiang, Lan Lu, Bo Tang

Status: Submiteed to **SIGIR** in Mar.2021

NOTABLE COURSE PROJECT

Pintos - Enhance A Simple Operating System Framework Mar.2021 - Present

Individual Course Project code

Pintos is a simple operating system framework for the 80x86 architecture. We need to practice on it by strengthening its support in thread-level.

- Implement some fundamental system calls and an efficient alarm clock
- Implement the **priority scheduling** with priority donation and multilevel feedback queue scheduling.
- Test Pintos with GDB

Influence Maximization and **Reversi for AI** Sep.2020 – Dec.2020

Individual Course Project code

Influence Maximization is the problem of finding a small subset of nodes in a social network that could maximize the spread of influence.

Reversi is a classical game with two players online for competing. Player with more pieces on the board will be the winner.

- Rank top 10% in the performance contest in my class

Canteen Defense for OOAD - A Tower Defense Game Sep.2020 – Dec.2020

Group Course Project code

Canteen Defense is a unity-based tower defense game. Scripts for it realized design patterns including prototype pattern, observer pattern and singleton pattern.

HONORS AND AWARDS

1st Prize, Scholarship for Outstanding Student	Sep.2020
1st Prize, Scholarship for Outstanding Student (5%)	Sep.2019
Bronze Medal, China Collegiate Programming Contest, Xiamen Site	Oct.2019
Scholarship for Outstanding Fresher	Sep.2018

EXTRA ACTIVITIES

Minister of College Student Union	2019 - 2020
Participating in Model United Nations Conferences: • NHSMUN, FDUIMUN, CSCMUN	2016 - 2018
Practicing the saxophone and Chinese Guzhen	2008 - Present