SIYU LIU

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Education

Sun Yat-sen University China
B. Eng. Computer Science *Aug. 2017 – Jun 2021*

- rank:2/110
- GPA:4.1

Coding Projects

XV6 | *A modern re-implementation of Sixth Edition Unix in ANSI C* Mar – Aug 2019

- Implemented an operating system supporting paging. Add some popular mechanism such as copy and write and lazy allocation.
- Developed a file system whose implementation is organized in multiple layers. The file system also support crash recovery!
- Implement switching between threads in a user-level threads package to support parallel.

Sponge | *User-space TCP library* Aug – Nov 2019

- Implemented TCPReceiver to translates between incoming TCP segments and the incoming byte stream.
- Implemented TCPSender to translate from an outgoing byte stream to segments that will become the payloads of unreliable datagrams.
- Support Address Resolution Protocol and my network stack can really talk to the real world!

Cool | *A compiler for the Cool Language* Mar – Aug 2020

- Use flex to create a scanner for the Cool programming language.
- Use bison to construct the abstract syntax tree(AST)
- Implement the static semantics of Cool. Use the abstract syntax trees(AST) built by the parser to check that a program conforms to the Cool specification.
- Implement code generator to produce MIPS assembly code that faithfully implements any correct Cool program.

BusTub | *A relational database management system* Apr 2021 – present

- Implement the buffer pool which is responsible for moving physical pages back and forth from main memory to disk. It allows a DBMS to support databases that are larger than the amount of memory that is available to the system.
- Implement an index in your database system. The index is responsible for fast data retrieval without having to search through every row in a database table, providing the basis for both rapid random lookups and efficient access of ordered records.

Experience

ByteDance Sept – Nov 2020
Software Developer Intern

Research Experience

Build CFG by using Intel PT Jun 2021 – Present
with Prof Zhiqiang Zuo *NJU, China*

- Reconstruct control flow graph of program by decoding Intel PT which is helpful in program analysis.
- Use threads to accelerate the decoding speed
- Implement animation for the decoding process for better understanding.

Awards & Honors

First-Prize Scholarship SYSU Sep. 2018
Top 5% students

Second-Prize Scholarship SYSU Sep. 2019
Top 10% students

Second-Prize Scholarship SYSU Sep. 2020
Top 10% students

Member of YAT-SEN school SYSU Sep. 2018 – present
Select 15 distinguished students majoring in Computer Science

Skills

Languages: C/C++, SQL, LaTeX, python, Java
Human Languages: Chinese(native), English(fluent)
Developer Tools: Git, shell
Blog: github(very active)