Chris Zhang

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Education

Tsinghua University, PRC Sept 2019 - Present
Bachelors of Technology in Computer Science and Technology GPA: 3.77/4.0 (84/209)

Research Interests

- Real-time Rendering
- Neural Rendering
- Differential Rendering
- 3D Reconstruction

Projects

LuisaRender Jan 2022 - Aug 2022
Prof. Kun Xu, Tsinghua University https://luisa-render.com/

- Collaborated with 2 undergraduates and 1 Ph.D. candidate on this heterogeneous computing & rendering framework.
- Participated in the design and implementation of the Python-embedded DSL, and solved the problem to invoke C++ functions in Python by utilizing pybind11.
- Solved the problem to compile Python into our DSL by hacking Python's AST.
- Tested and benchmarked the performance of the Python-embedded DSL, with which the C++ counterpart was compared.

Rust-SPPM Apr 2021 - Aug 2021
Personal Project, Tsinghua University github.com/comradez/rust-SPPM

- Learned Stochastic Progressive Photon Mapping(SPPM) algorithm from the original paper.
- Constructed a photorealistic software renderer with SPPM algorithm in Rust, with anti-aliasing, texture mapping and multi-thread support.

KatlinDB Nov 2021 - Jan 2022
Class Project, Tsinghua University github.com/comradez/KatlinDB

- Built a database management system in Kotlin with B+ Tree indexing, foreign key integrity constraints, joint primary key support, etc.
- Utilized ANTLR to implement an SQL parser for the database, with techniques learnt in compiler construction course.

Pastebin Aug 2021 - Present
Personal Project, Tsinghua University

- Implemented a high-performance online paste and file transfer service in Rust, harnessing async operations to get high performance with tokio and actix-web.
- Deployed the service on my personal server, with open access to my classmates.

Experience

Bytedance Inc. - Lark Infrastructure June 2022 - Present
Lark IM Core R&D Engineer, Internship Beijing, China

- Collaborated with developers from the industry in a codebase with ∼1 million lines of code, gained experience and learned the SOP to work together on a big project.
- Migrated multiple modules in the codebase to our new architecture.
- Designed and implemented an auxiliary tool to perform post-migration check to improve code quality, which is widely used by my collegues in the team.

Leadership

Technical Advisory Board Core Member, Students' Science Association in Department of CS Sept 2021 - Present

- Worked with classmates to promote innovation and application of class-learned knowledge.
- Proposed the technical draft to set up a student-maintained learning guide website in supplement of course materials.
- Initiated and contributed to the Rust beginner's guide for the learning guide website, providing quick starts for those who are interested.

Skills & Awards

Programming languages: Rust, C++, Python, Kotlin, Java, C
ML/AI: Pytorch, Numpy, Matplotlib
Language: Chinese(native), English(112 in TOEFL iBT test)
Miscellaneous: Git, Shell, Linux(Server Maintainance), SQL, LaTeX
Award: First Prize in National Olympiad in Informatics in Provinces, 2017

Key Courses Taken

Computer Science:
Computer Graphics, High Performance Computing, Data Structures and Algorithms, Operating System, Principles and Practice of Compiler Construction, Databases, Computer Networks.

Mathematics:
Linear Algebra, Discrete Mathematics, Probability and Mathematical Statistics, Calculus.