Weihang (Frank) Fan

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA   May 2020

B.S. in Computer Science, Minor in Sonic Arts, QPA: 3.97/4.00

- Parallel Computer Architecture and Programming

- Distributed Systems

- Optimizing Compilers for Modern Architectures (PhD-level)

EXPERIENCE

Software Engineer, Compiler Infrastructure Team, **SambaNova Systems**   07/2020 – present

Software Engineering Intern, Query Execution Team, **MemSQL**   05/2019 – 08/2019

- Designed and implemented new functionalities for time series data, involving work in network serialization and type system.

- Implemented functionalities from other database systems to database engine, such as NULLS FIRST/LAST and bit aggregate functions.

- Worked on and fixed bugs in database language parser, type system, user-defined aggregate functions (UDAF), distributed query execution, and LLVM code generation.

Teaching Assistant, **Carnegie Mellon University**   01/2018 – 12/2019

- Parallel Computer Architecture and Programming - Caching, SIMD, GPU, Parallel Architectures

- Introduction to Computer Systems - Signals, Dynamic memory allocation, Concurrency

PROJECTS

Intel TurboBoost Analysis

- Analyzed performance variation in a variety of microbenchmarks due to Intel TurboBoost, the Intel CPU feature that dynamically boosts core frequencies within the thermal limit.

OpenMP Runtime Instrumentation

- Modified the GCC OpenMP runtime to dynamically profile processor cache misses and false sharing, and reduce the degree of parallelism accordingly.

- Used Intel Cache Allocation Technology (CAT) to perform runtime way-based hardware L3 cache partitioning based on the above dynamic profiling results to reduce cache contention.

ACTIVITIES

Student Body Vice President for Finance   05/2019 – 05/2020

- Responsible for supervision and auditing of student organization finances.

- Lead a 25-person committee that allocates the $2.1 million Student Activities Fee at the university.

SKILLS

C++, **Relational Database Systems**, **Parallel Architectures**, CUDA, MPI, Python, Git, Unix/Linux