

HAIBO HAO

Software Engineer

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EDUCATION

- Institute of Computer Technology, Chinese Academy of Sciences** Sep. 2015 -- Jul. 2018
Master student in Computer Architecture
- Xidian University** Sep. 2011 -- Jul. 2015
Bachelor student in Computer Science & Technology

PROJECT EXPERIENCE

- GEMM and Convolution Algorithm Optimization on AMD GPUs** Aug. 2017 -- Now
By understanding AMD GPU microarchitecture to achieve performance tuning bare metal. After a quick investigation of AMD GCN3 ISA architecture and LLVM assembly tools, I came to the conclusion that it is possible to build optimized assembly kernels for GCN.
- Fully understand rocBLAS and MIOpen.
 - Achieving GEMM performance tuning though benchmarking(in progress).
- TGMM Cell Detection and Tracking Algorithm Parallel Optimization** Oct. 2016 -- Dec. 2016
Detecting and tracking cells in the fluorescence microscopic images by TGMM(Tracking with Gaussian Mixture Model) algorithm.
- Implementing Median Filter and Gaussian Mixture algorithm on the GPU.
 - Optimize Linear algebra program by using Intel AVX512 instructions.
- CATMAID: An Image Tracing Tool** Jun. 2016 -- Aug. 2016
CATMAID (Collaborative Annotation Toolkit for Massive Amounts of Image Data) is an efficient web collaboration annotation tool. I redevelop CATMAID (40k+ python, 230k+ js) so that it can be used to annotate 5d-images.
- I fixed many bugs when I migrate CATMAID from the django lower version to high version.
 - On the basis of HHMI Janelia Research open source project CATMAID , I implement the feature that multi-people can do annotation simultaneously.

🏢 INTERN EXPERIENCE

- Machine daily log file compression at LogInsight** Mar. 2016 -- May. 2016
- I implemented the algorithm described in paper *Fast and efficient log file compression*. Improving compression ratio by 17%~18% compared to gzip.

🏆 AWARDS

- Second price in the "Huawei Cup" programming contest May. 2014
Xidian University second-class scholarships Sep. 2012
Second prize in Xidian University Mathematical modeling competition Jun. 2012

⚙️ SKILLS

- Skilled in C, C++, Python. Familiar with data structures and algorithms and had a good programming style.
- Understand the AMD GCN GPU architecture.
- English : CET6.