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Bodun Hu

Research Interests

Operating System, Machine Learning System, GPU, Network, Distributed System

Education

2021–Present **Ph.D. in Computer Science**, *The University of Texas at Austin*, Austin, TX.
Advisor: Aditya Akella

2020–2021 **M.S. in Computer Science**, *The University of Texas at Austin*, Austin, TX.
Advisor: Christopher J. Rossbach

2016–2020 **B.S. in Computer Science (Research Distinction)**, *The University of Texas at Austin*, Austin, TX.
Advisor: Christopher J. Rossbach

Publications

[1] **Bodun Hu** and Christopher J. Rossbach. Altis: Modernizing GPGPU Benchmarks. In *Proceedings of the 2020 IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS)*, August 2020. 14p 29.5%.

Research Experience

2020–Present **Sparse Neural Network Inference**, *The University of Texas at Austin*, Austin, TX,
with Aditya Akella.
- Ongoing work on studying the performance implication of sparse neural network in data centers.
- Design a high-performant inference management system to reduce resource consumption for sparse neural network inferences.

2020–2021 **Automatic Kernel-space Support for Accelerators**, *The University of Texas at Austin*, Austin, TX,
with Christopher J. Rossbach.
- Built a generic API remoting system to expose accelerator APIs to kernel subsystems with close-to-native performances (in submission).

2018–2020 **GPU Benchmark Suite**, *The University of Texas at Austin*, Austin, TX,
with Christopher J. Rossbach.
- Designed a benchmark with improved diversity over existing GPU benchmarks by extending application domains with modern CUDA features.
- Published and presented as the opening talk of virtual ISPASS'20 conference.

2019–2020 **Implementing TCP as a service (TAS) in P4**, *The University of Texas at Austin*, Austin, TX,
with Simon Peter.
- Implemented the fast path of TAS, the state-of-the-art network stack, with the latest network packet processing language, P4, in order to facilitate migration of the TAS codebase to programmable NICs.

2016–2017 **Defect Detection in 3-D printed Objects**, *The University of Texas at Austin*, Austin, TX,
with Cem Tutum.
- Developed a system to instrument 3-D printing instructions with user-defined behaviors.
- Built a detection system with commodity hardware to automatically terminate 3-D printing process in the presence of object defect.

Industry Experience

2018 **Software Engineering Intern**, *H3C*, Chengdu, China.
Streaming processing on Kubernetes cluster.

2017 **Software Engineering Intern**, *Wisesoft*, Chengdu, China.
Air traffic control system audio classification.

Awards

2020 ISPASS Student Travel Award.

2020 Research Distinction by the College of Natural Sciences.

Teaching Experience

Spring 2020 **TA: Multicore Operating System Implementation (378)**, *The University of Texas at Austin*.
Instructor: Simon Peter

Presentations

Aug 2020 *Altis: Modernizing GPGPU Benchmarking*, presented at ISPASS'20

Nov 2020 *Accelerating Kernel Access to Hardware Acceleration*, presented at Texas Systems Symposium

Service

2021 **Junior Graduate Admissions Committee**, *The University of Texas at Austin*.

Skills

Tools Python, C/C++, Java, Go, Rust, Haskell, Matlab

Frameworks OpenMP, MPI, PyTorch, CUDA

Languages English (fluent), Chinese (fluent)