Guanzhou Hu

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EDUCATION

ShanghaiTech University *Sep 2016 - Jul 2020*
Candidate for B.E., Computer Science and Technology *Shanghai, China*

- GPA: 3.9 / 4.0 (rank 2 / 183)
- Honors: Dean's Scholarship (2019), President's Scholarship (2017, 2018), Outstanding Student (2017, 2018)
- Relevant coursework: Computer Architecture III, Compilers, Parallel Computing

Massachusetts Institute of Technology *Sep 2019 - Jun 2020*
Undergraduate Special Student, Computer Science *Cambridge, MA, USA*

- Relevant coursework: Distributed Systems Engineering, Computer Networks, Computer Systems Security

RESEARCH EXPERIENCE

Affordable AI: Cost-Efficient & Scalable Graph Convolutional Networks Computing Framework with the Aid of Serverless (Lambda) Computing *Jul 2019 - Oct 2019*
CSST Research Intern, University of California, Los Angeles, with Prof. Harry Xu *Los Angeles, CA, USA*

- Integrated new and emerging *serverless computing* techniques into traditional graph computing to build an affordable, efficient, and highly-scalable graph convolutional networks (GCNs) computing platform without expensive dedicated GPUs.
- Implemented the first workable prototype with AWS Lambdas service, and reached linear scalability and 100% cost-efficiency.

NcTrace: Optimized Trace Data Storage with the netCDF Format *Mar 2019 - Aug 2019*
Leader of project team, ShanghaiTech University, L.I.O.N group, with Prof. Shu Yin *Shanghai, China*

- Optimized the storage of comma-separated values (CSV) trace data using the netCDF I/O library. Introduced the "dimension packing" storage model which reduces the file size and accelerates users' analysis tasks.
- Tested with Google cluster traces, and achieved 7:1 size reduction with 2 orders of magnitude acceleration on reading.

Active I/O: High-Performance Parallel Content-aware Storage System *Jan 2019 - Aug 2019*
Research Assistant, ShanghaiTech University, L.I.O.N Group, with Prof. Shu Yin *Shanghai, China*

- Designed a high-performance, parallel file system named RosFS. It aims to dig out the "content locality" within highly-structured data formats, by clustering data by topics and providing users a better locality when operating on a subset of topics.
- Tested with Robot Operating System bag files, and achieved 6.5x performance improvement on opening and at least 1.4x on reading.

PUBLICATIONS & PATENTS

- Yin, S. and Hu, G. 2019. *A Storage System Management Policy Based on Data Content Locality*. CN. Patent application 201910499391.9, filed in June 2019. Patent pending.

TEACHING EXPERIENCE

Teaching Assistant in Computer Architecture *Feb 2019 - Apr 2019*
School of Information Science and Technology, ShanghaiTech University *Shanghai, China*

Teaching Assistant in Operating Systems *Sep 2018 - Jan 2019*
School of Information Science and Technology, ShanghaiTech University *Shanghai, China*

- Guided semester-long course projects on the PintOS system kernel from Stanford CS140.

Teaching Assistant in Discrete Mathematics *Mar 2018 - Jul 2018*
School of Information Science and Technology, ShanghaiTech University *Shanghai, China*

PRIZES & AWARDS

- Outstanding Research Award, CSST Program 2019, University of California, Los Angeles *Sep 2019*
- Second Class Prize, ASC Supercomputing Cluster Competition 2019 (team leader) *Mar 2019*
- Outstanding Teaching Assistant Award, School of Information Science and Technology *Jan 2019*
- Meritorious Winner, Mathematical Contest in Modeling (MCM) 2018 *Apr 2018*

MISCELLANEOUS

- **Skills:** System programming, C/C++, Rust, Go, Python, Linux server dev/ops, MIPS