Shixin Song

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EDUCATION

Massachusetts Institute of Technology   Cambridge, MA, USA
Ph.D. Student in Computer Science   *2022 – Present*
- **Advisor: Prof. Mengjia Yan**

University of Michigan   Ann Arbor, MI, USA
B.S.E. in Computer Science   *2020 – 2022*
- **GPA: 4.00/4.00**

Shanghai Jiao Tong University   Shanghai, China
B.E. in Electrical and Computer Engineering   *2018 – 2022*
- **GPA: 3.89/4.00** (ranked 9th out of 248 students in the class)
- Ranked in the top 0.07% percentile in the National College Entrance Exam

RESEARCH EXPERIENCE

Redesigning the Branch Target Buffer for Data Center Applications   2021

Presented a novel BTB replacement policy that achieves near-ideal front-end processor performance for data center applications

Paper accepted at ISCA'22

Won the first place award at MICRO'21 ACM Student Research Competition

Enabling Early Hardware Development for Futuristic Data Center Applications   2021

Characterized widely-used data center applications (e.g. MySQL, MongoDB, FFmpeg, Nginx) and predicted how these applications might evolve in the future to enable suitable hardware development early on

PEER-REVIEWED CONFERENCE PUBLICATION

Thermometer: Profile-Guided BTB Replacement for Data Center Applications   2022
International Symposium on Computer Architecture (ISCA) 2022

Shixin Song, Tanvir Ahmed Khan, Sara Mahdizadeh Shahri, Akshitha Sriraman, Niranjan K Soundararajan, Sreenivas Subramoney, Daniel A. Jiménez, Heiner Litz, Baris Kasikci

AWARDS AND HONORS

CRA Outstanding Undergraduate Researcher Award Honorable Mention   2022
Computing Research Association

ACM Student Research Competition First Place Winner   2021
MICRO'21

Roger King Scholarship   2021
University of Michigan   *Ann Arbor, USA*

Dean's List   2020, 2021
University of Michigan   *Ann Arbor, USA*

SJTU Undergraduate Excellence Scholarship   2019, 2020
Shanghai Jiao Tong University   *Shanghai, China*

Fuda Scholarship   2019
Shanghai Jiao Tong University   *Shanghai, China*

Experience

Undergraduate Research Assistant
2021
University of Michigan
Ann Arbor, USA
- **Advisor**: Prof. Baris Kasikci

Teaching Assistant
2019 − 2021
Shanghai Jiao Tong University
Shanghai, China
- Introduction to Computers and Programming (VG 101)
- Introduction to Engineering (VG 100)
- Honors Mathematics II (VV 186)

Grader
2021
University of Michigan
Ann Arbor, USA
- Introduction to Computer Organization (EECS 370)

Student Advisor
2019
Shanghai Jiao Tong University
Shanghai, China

Volunteer Teaching
2018 − 2019
Sanhe Junior School
Yunnan, China
- Math classes for grade 7 students

Technical Skills

Languages: C/C++, Python, Matlab, Mathematica, LaTeX, JavaScript
Software Tools: Linux Perf, Intel VTune, ChampSim, Git, Docker, CLion, PyCharm, IntelliJ, RoadRunner
Frameworks and Libraries: Pandas, NumPy, Matplotlib, React, Flask

Course Work

University of Michigan
* EECS 470: Computer Architecture, EECS 482: Introduction to Operating System, EECS 475: Introduction to Cryptography

Shanghai Jiao Tong University
* VE 280: Programming and Elementary Data Structures, VV 557: Methods of Applied Mathematics