

Shixin Song

+1 734 546 8569 | shixins@umich.edu | zhizhuoxin.github.io

RESEARCH INTEREST

My research interest is in the intersection of computer architecture and software systems. I am specifically interested in building hardware-software co-design solutions that improve data center performance, energy, reliability, and security, to have significant real-world impact.

EDUCATION

University of Michigan <i>Bachelor of Science in Computer Science</i> <ul style="list-style-type: none">• GPA: 4.00/4.00	Ann Arbor, USA 2020 - 2022
Shanghai Jiao Tong University <i>Bachelor of Science in Electrical and Computer Engineering</i> <ul style="list-style-type: none">• 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	Shanghai, China 2018 - 2020

RESEARCH EXPERIENCE

Redesigning the Branch Target Buffer for Data Center Applications Paper under submission: "Name omitted to maintain anonymity", Shixin Song , Tanvir Ahmed Khan, Sara Mahdizadeh Shahri, Akshitha Sriraman, Niranjana K Soundararajan, Sreenivas Subramoney, Daniel A. Jiménez, Heiner Litz, Baris Kasikci. [<i>International Symposium on Computer Architecture (ISCA) 2022</i>] <i>Presented a novel BTB replacement policy that achieves near-ideal front-end processor performance for data center applications</i> <i>Won the first place award at MICRO'21 ACM Student Research Competition</i>	2021
Enabling Early Hardware Development for Futuristic Data Center Applications <i>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</i>	2021

PEER-REVIEWED POSTER PUBLICATION

HWC: Profile-Guided Branch Target Buffer Replacement for Data Center Applications <i>Student Research Competition at International Symposium on Microarchitecture (MICRO) 2021</i> <i>First place winner in the undergraduate category</i>	2021
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------

AWARDS AND HONORS

CRA Outstanding Undergraduate Researcher Award Honorable Mention <i>Computing Research Association</i>	2022
ACM Student Research Competition First Place Winner <i>MICRO'21</i>	2021
Roger King Scholarship <i>University of Michigan</i>	2021 Ann Arbor, USA
Dean's List <i>University of Michigan</i>	2020, 2021 Ann Arbor, USA
SJTU Undergraduate Excellence Scholarship <i>Shanghai Jiao Tong University</i>	2019, 2020 Shanghai, China
Fuda Scholarship <i>Shanghai Jiao Tong University</i>	2019 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, L^AT_EX, 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 482: Introduction to Operating System, EECS 485: Web Systems, EECS 475: Introduction to Cryptography

Shanghai Jiao Tong University

- * VE 280: Programming and Elementary Data Structures, VV 557: Methods of Applied Mathematics

REFERENCES

Prof. Baris Kasikci

Assistant Professor

Electrical Engineering and Computer Science

University of Michigan

Email: barisk@umich.edu

Prof. Akshitha Sriraman

Assistant Professor

Electrical and Computer Engineering

Carnegie Mellon University

Email: akshitha@cmu.edu

Prof. Heiner Litz

Assistant Professor

Computer Science and Engineering

University of California, Santa Cruz

Email: hlitz@ucsc.edu