

Hamidreza Zare

CS PH.D. STUDENT AT PENN STATE UNIVERSITY

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Education

Penn State University

[State College, PA](#)

DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE, GPA: 3.87/4.0

August 2019 - Present

- **Advisor:** Professor Bhuvan Urgaonkar — *Working on methods to adopt the cost-effective configuration for geo-distributed storage considering the dynamism in workloads*
- **Relevant Graduate Courses:** Fundamentals of Computer Architecture, Algorithm Design and Analysis, Distributed algorithms, Operating System Design, Cloud Computing, Performance Evaluation

Sharif University of Technology

[Tehran, Iran](#)

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING, GPA: 18.73/20.00 (3.94/4.00)

September 2015 - June 2019

- **Thesis:** A new architecture for the die-stacked DRAM considering both dynamic and static behavior of the modern big-data application; Using the die-stacked DRAM partly as a part of memory and partly as a cache — *In HPCAN lab under the supervision of Professor Hamid Sarbazi-Azad*

NODET (National Organization for Exceptional Talents), Dastgheib 1

[Shiraz, Iran](#)

DIPLOMA IN PHYSICS AND MATHEMATICS, GPA: 19.44/20.00 (4.00/4.00)

September 2011 - June 2015

Research Interests

Cloud Computing

- Storage systems
- Resource Management and Scheduling

Distributed Systems

Computer Systems

Computer Architecture

Work Experience

Scientific Green Co. Ltd

[Tehran, Iran](#)

INTERN - SYSTEM SOFTWARE DEVELOPER

Jul. 2018 - Sept. 2018

The company was developing an infrastructure based on LoRaWAN to offer IoT services. My job was to customize the device authentication code in lorasever.io (an open-source LoRa server stack) to make them able to use their protocol.

NAAD

[Tehran, Iran](#)

SYSTEM SOFTWARE DEVELOPER

Jun. 2017 - Sept. 2017

They were designing an HSM (using wolfSSL on Xilinx SoC). I developed a logger for the module in C++ and wrote python scripts to automate testing the module.

Research Experience

Penn State University

[State College, PA](#)

RESEARCH ASSISTANT

Aug. 2019 - Present

- **Under the supervision of Professor Bhuvan Urgaonkar**
- Public clouds are an ever-emerging technology solution to users' needs of computing engines. There are several big public cloud providers that offer a broad range of computing machine options with a broad range of prices, presenting the users with a bewildering choice of VM types. A poor choice of VMs can have significant implications on performance and costs. We are trying to propose a heuristic method to find the near-optimal configuration of data centers in public clouds to build cost-efficient geo-distributed key-value storages considering the patterns' dynamism that modern applications access data.

Sharif University of Technology

RESEARCH ASSISTANT

Tehran, Iran

Jan. 2017 – Jun. 2019

- **Under the supervision of Professor Hamid Sarbazi-Azad**
- Die-stacked DRAM is a promising solution to the memory bandwidth bottleneck of multi-core processors, but it cannot accommodate the entire dataset of the modern big-data applications. Prior works have tried to use it as a large cache in the memory hierarchy or as a part of the main memory. Works that use it as a cache while adapting to dynamism in applications but suffer from the tag storage/latency/bandwidth overhead. On the other hand, works that use Die-stacked DRAM as a part of main memory while eliminating the need for tags, and hence, providing efficient access to data, but lack adapting to dynamism in applications. Considering both the dynamic and static behavior of the modern big-data applications, we proposed a new architecture to use the Die-Stacked DRAM partly as a part of the main memory and partly as a cache. The paper is available at arxiv.org/abs/1809.08828.

Teaching Experience

Penn State University

TEACHING ASSISTANT

State College, PA

Aug. 2020 – Present

- **Distributed systems (CSE513)**
- Instructed by Professor Bhuvan Ugaonkar

Penn State University

TEACHING ASSISTANT

State College, PA

Jan. 2020 – May 2020

- **Introduction to Systems Programming Course (CMPSC311)**
- Instructed by Professor Patrick McDaniel

Sharif University of Technology

TEACHING ASSISTANT

Tehran, Iran

Sept. 2018 - Jan. 2019

- **Computer Language and Structure**
- Dr. Hossein Asadi

Sharif University of Technology

TEACHING ASSISTANT

Tehran, Iran

Sept. 2017 - Jan. 2018

- **Computer Language and Structure**
- Dr. Hossein Asadi

Sharif University of Technology

TEACHING ASSISTANT

Tehran, Iran

Feb. 2017 - Jun. 2017

- **Logical Circuit**
- Dr. Siavash Bayat-Sarmadi

Sharif University of Technology

TEACHING ASSISTANT

Tehran, Iran

Sept. 2016 - Jan. 2017

- **Fundamentals of Programming**
- Dr. Omid Gheibi

Honors

Ranked 365th Among the 180000+ participants in the National Universities Entrance Exam
Admitted to NODET passing an exam with an acceptance rate below 2%

Skills

Programming	Expert in (C and C++), Python, Bash, Node.js (familiar), X86 Assembly, Verilog (HDL)
Frameworks & Tools	Git, Google Protobuf, gRPC, Google Cloud Platform, ZSim, GAP Benchmark Suite, Modelsim, Quartus
Operating Systems	Ubuntu, Windows
Type Setting	\LaTeX , Microsoft Office

References

Professor Bhuvan Urgaonkar

ASSOCIATE PROFESSOR OF COMPUTER SCIENCE AND ENGINEERING DEPARTMENT AND GRADUATE PROGRAM COORDINATOR AT
PENN STATE UNIVERSITY

- **Website:** cse.psu.edu/~buu1
- **Email:** buu1@psu.edu

Professor Viveck Cadambe

ASSOCIATE PROFESSOR IN THE DEPARTMENT OF ELECTRICAL ENGINEERING AT PENN STATE UNIVERSITY

- **Website:** ee.psu.edu/viveck
- **Email:** viveck@psu.edu