Ahmad Hossein Yazdani

Computer Science PhD student at Virginia Tech

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Research interests

I'm keen on doing research on a variety of aspects in computer systems , especially in I/O in distributed systems, cloud computing and High Performance Computing. In particular, my research interests have recently been shifted towards **Systems for ML**, as well as employing **ML models to optimize Systems**. Besides, I would like to conduct research on some hot areas like **Adapting distributed applications to an environment containing persistent memories**, **GPU scheduling of distributed applications**, in addition to **Software Hardware co-design** to optimize serverless computing environments

Education

2020–present **PhD, Computer Science**, *Virginia Polytechnic Institute and State University (Virginia Tech)*, Blacksburg, VA, US.
Advisor: Dr Ali Butt, **GPA:** 3.92

2015–2020 : **Bachelor of Computer Software Engineering**, *University of Tehran*, Tehran, Iran.
GPA: 3.2

Conference & Workshop publications

[**FAST'23**★] Redwan Ibne Seraj Khan, **Yazdani, Ahmad Hossein**, Yuqi Fu, Arnab K Paul, Bo Ji, Xun Jian, Yue Cheng, and Ali R Butt. Shade: Enable fundamental cacheability for distributed deep learning training. In *Proceedings of the 21th USENIX Conference on File and Storage Technologies*, page 14, Santa Clara, CA, US, Feb. 2023. USENIX Association. doi:TBD.

★ **Top-tier venue**

Research Experience

August,2020 – present ***Research Assistant at Distributed System and Storage Lab*, Virginia Tech**.

Advisor : Dr. Ali Butt, *Professor, Department of Computer Science*, Virginia Tech

- Contributing to Metis project ongoing which is about improving the cachability of the deep learning workloads
- Leading a collaborative research with Analytics & AI Methods at Scale Group at Oak Ridge National Laboratory (ORNL) on analytically recognizing the behavior of the users and jobs submitted to HPC systems to improve the I/O efficiency of the HPC systems. We have recently started collaborating with Suren Byna and Jean Luca Bez from Lawrence Berkeley National Laboratory (LBNL). The work has been kicked off since the time I interned at ORNL in summer 2021

June,2023 – present ***Student Assistant at Lawrence Berkeley National Laboratory (LBNL), internship***.

Mentors: Suren Byna, Jean Luca Bez

- Continuing my research on characterizing the sources of I/O performance variation in HPC, and striving to alleviate the I/O performance volatility.

June,2021 – August,2021 ***Internship at Oak Ridge National Laboratory, Analytics & AI Methods at Scale Group***.

Mentors: Feiyi Wang, Sarp Oral, Ahmad Maroof Karimi and Arnab Kamur Paul

- First studied the literature on I/O characterization at application level to get insights for building an application and user aware I/O scheduler
- Then collected I/O information of different users and different applications, and showed the user's behaviour affects the I/O performance quite a lot
- Then presented my work at Internship Symposium held for the interns joined the national lab in summer 2021

June,2018 – August,2018 ***Summer Internship at Router lab at University of Tehran***.

- Improved the lab's website in terms of responsiveness and SEO
- Read CISCO's documentations to make the lab router's CLI identical to CISCO
- Also, I was invited to participate in a project for adding QoS to data plane of the lab's routers.

Fellowships & Awards

2022 ***Student Volunteer at SC22***, Dallas, TX

Presentations

2022 **MUG22**, A conference sharing the recent advancements on MVAPICH (A library overlaying MPI), and how these improvements impact the applications

Computer skills

Programming Languages	Python, PyTorch, keras, R, C, C++, Advanced JAVA, Tensorflow, Go
Web Technologies	HTML 5, PHP, JSP, Javascript, Django, nodeJS
Database	SQL, MySQL, Apache, MSSQL

Teaching experience

Virginia Tech

Spring 2023 : **CS3214: Computer Systems, instructor**.

- Giving presentations to one section (75 students) in parallel with two other sections taught by Godmar Back and Dan Williams.

Fall 2022 : **CS3214: Computer Systems, instructor**.

- Giving presentations to one section (75 students) in parallel with two other sections taught by Godmar Back and Huaicheng Li.

Summer 2022 **CS 3114: Data Structures and Algorithms, teaching assistant**.

- Grading, Office hours

Spring 2022 : **CS3214: Computer Systems, teaching assistant**, Virginia Tech.

- Grading assignments and projects, hosting office hours

Fall 2021 : **CS3214: Computer Systems, teaching assistant**.

- Grading assignments and projects, hosting office hours

Summer 2021 **CS2506: Computer Organization II, teaching assistant**.

- Grading, Office hours

Spring 2021 : **CS3704: Intermediate Software Design and Engineering, teaching assistant**.

- Grading assignments, hosting office hours

Fall 2020 : **CS1114: Introduction to Software Design, teaching assistant**.
- Grading assignments, hosting office hours and lab sessions

University of Tehran

Spring 2020 : **Artificial intelligence, teaching assistant**.
- hosted project help session, created a project assignment and homework assignment, grading

Fall 2019 : **Formal Methods in Software Engineering, teaching assistant**.
- created a project assignment and a homework assignment

Spring 2019 : **Programming Languages and Compilers, teaching assistant**.
- created and led the project course, hosted a help session for each phase of the project, grading

Fall 2018 : **Programming Languages and Compilers, teaching assistant**.
- created 2 homework assignments, grading the course project and homework assignments

Referees

Dr. Ali Butt
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Dr. Yue Cheng
Assistant Professor, Department of Computer Science & Data Science
University of Virginia, US
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Dr. Ahmad Maroof Karimi
HPC Operational Data Scientist in Analytics and AI Methods at Scale Group
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Dr. Arnab Kumar Paul
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