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Gohar Irfan Chaudhry

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Research Interests

My research goal is to design and develop resource-efficient systems for serving AI workloads at scale. I work on various aspects of the cloud platform, including runtimes and operating systems to hardware/software codesign, towards realizing this goal.

Education

- **Massachusetts Institute of Technology - PhD Computer Science** (Sept 2022 - Present)
 - Advisor: Prof. Adam Belay
- **University of Illinois at Urbana-Champaign - MSc Computer Science** (August 2016 - May 2018)
 - Thesis: Network Analysis and Verification
- **Lahore University of Management Sciences - BSc Computer Science** (August 2012 - May 2016)

Employment

Research Software Engineer Systems Research Group	Microsoft Research	(Oct 2019 - Aug 2022)
<ul style="list-style-type: none">• Working on improving efficiency of cloud platforms, in particular serverless infrastructure.		
Software Engineer Windows Operating System Group	Microsoft	(July 2018 - Oct 2019)
<ul style="list-style-type: none">• Implementation of a virtualized audio stack in the OS to run cross-platform on PC and Xbox.		

Publications

- **Unleashing The Potential of Datacenter SSDs by Taming Performance Variability**
G I Chaudhry, A Bhardwaj, Z Ruan, A Belay
(NSDI 2026) USENIX Symposium on Networked Systems Design and Implementation
- **Murakkab: Resource-Efficient Agentic Workflow Orchestration in Cloud Platforms**
G I Chaudhry, E Choukse, H Qiu, I Goiri, R Fonseca, A Belay, R Bianchini
Pre-Print
- **Towards Resource-Efficient Compound AI Systems**
G I Chaudhry, E Choukse, I Goiri, R Fonseca, A Belay, R Bianchini
(HotOS 2025) ACM SIGOPS Workshop on Hot Topics in Operating Systems
- **Architecture-Level Modeling of Photonic Deep Neural Network Accelerators**
T Andrusis, G I Chaudhry, V M. Suriyakumar, J S. Emer, V Sze
(ISPASS 2024 - Poster Session) IEEE International Symposium on Performance Analysis of Systems and Software
- **Making Kernel Bypass Practical for the Cloud with Junction**
J Fried, G I Chaudhry, E Saurez, E Choukse, I Goiri, S Elnikety, R Fonseca, A Belay
(NSDI 2024) USENIX Symposium on Networked Systems Design and Implementation
- **Palette Load Balancing: Locality Hints for Serverless Functions**
M Abdi, S Ginzburg, C Lin, J M Faleiro, I Goiri, G I Chaudhry, R Bianchini, D S Berger, R Fonseca
(EuroSys 2023) European Conference On Computer Systems
- **Memory-Harvesting VMs in Cloud Platforms**
A Fuerst, S Novakovic, I Goiri, G I Chaudhry, P Sharma, K Arya, K Broas, E Bak, M Iyigun, R Bianchini
(ACM ASPLOS 2022) Conference on Architectural Support for Programming Languages and Operating Systems
- **Faa\$T: A Transparent Auto-Scaling Cache for Serverless Applications**
F Romero, G I Chaudhry, I Goiri, P Gopa, P Batum, N J. Yadwadkar, R Fonseca, C Kozyrakis, R Bianchini
(ACM SoCC 2021) Symposium on Cloud Computing

- **Faster and Cheaper Serverless Computing on Harvested Resources**
Y Zhang, Í Goiri, G I Chaudhry, R Fonseca, S Elnikety, C Delimitrou, R Bianchini
(ACM SOSP 2021) *Symposium on Operating Systems Principles*
- **Serverless in the Wild: Characterizing and Optimizing the Serverless Workload at a Large Cloud Provider**
M Shahrad, R Fonseca, Í Goiri, G I Chaudhry, P Batum, J Cooke, E Laureano, C Tresness, M Russinovich, R Bianchini
(USENIX ATC 2020) *Annual Technical Conference - Winner of the Community Award*
- **High Coverage Testing of Softwarized Networks**
S Prabhu, G I Chaudhry, B Godfrey and M Caesar
(ACM SIGCOMM 2018 - SecSoN) *Workshop on Security in Softwarized Networks*
- **MegaVM - A Memory Enhancing Framework for Datacenters**
R Tahir, G I Chaudhry, B Bakht, H Sharif, F Zaffar, M Caesar
(USENIX NSDI 2016 - Poster Session) *Symposium on Networked Systems Design and Implementation*

Teaching Assistant

- **University of Illinois at Urbana-Champaign** (2017 - 2018)
CS484 Parallel Programming (OpenMP, MPI, Charm++), CS125 Intro to Programming (Java)
- **Lahore University of Management Sciences** (2013 - 2016)
CS473 Network Security (C, C++), CS382 Network-Centric Computing (Java), CS200 Intro to Programming (C++)

Other Experiences

- **Recruiting** (2019 - 2022)
 - Conducting technical interviews for Microsoft