

Saam (SeyedMohammadHossein) Hosseini

CS Ph.D. student, ML systems — checkpointing for multi-tenant LLM training; co-author: USENIX NSDI '26, ACM SIGCOMM '26
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EDUCATION

University of Colorado Boulder

Ph.D. in Computer Science — advisors: Dr. Mark Zhao & Prof. Sangtae Ha

Boulder, CO

Jan 2025 – May 2029 (expected)

University of Edinburgh

Master in Computer Science (Chevening Scholar) — withdrew to begin Ph.D. at CU Boulder

Edinburgh, UK

2024

Ferdowsi University of Mashhad

B.Sc. in Computer Engineering — GPA: 19.12/20.0, ranked 3rd of 140

Mashhad, Iran

2018 – 2023

RESEARCH EXPERIENCE

Graduate Research Assistant

University of Colorado Boulder — advised by Dr. Mark Zhao & Prof. Sangtae Ha

Boulder, CO

Jan 2025 – Present

- Leading (first author) **Cluster-Wide Checkpointing for Multi-Tenant LLM Training** (in preparation; targeting **EuroSys/ASPLOS 2027**)
- Co-developed **eXpressSFU (USENIX NSDI '26**, 2nd author), a WebRTC SFU that offloads the media data plane — SRTP crypto, packet forwarding, and simulcast/SVC layer selection — onto the Arm cores of an NVIDIA BlueField-2 SmartNIC via DPDK, cutting media-packet latency **8×** and compute power up to **60%** while serving **3×** **more concurrent users** than the software baseline (300 users at 1080p on a single Arm core)
- Contributed to **DeepSFU (ACM SIGCOMM '26**, 3rd author), real-time deepfake detection as a native SFU service: detects deepfake onsets directly on the encoded VP9 bitstream and offloads crypto and NIC-to-GPU frame movement to a BlueField-3 DPU (DOCA AES-GCM, GPUDirect RDMA, CUDA/NVDEC) — **~144×** lower per-frame processing latency and **26×** more concurrent conferences at 95.8% precision

PUBLICATIONS

- T. Tran, **S. M. H. Hosseini**, S. Kim, K. Lee, N. Bui, D. Grunwald, S. Ha. “[eXpressSFU: Toward Super-Scalable Video Conferencing with SmartNICs.](#)” *USENIX NSDI*, 2026.
- T. Tran, S. Ebadi, **S. M. H. Hosseini**, W. Shin, E. Ram, Y. Son, S. Kim, N. Bui, K. Lee, E. Keller, S. Ha. “[DeepSFU: Scalable Deepfake Detection for Video Conferencing.](#)” *ACM SIGCOMM*, 2026.
- H. Dinh, T. Tran, P. Oli, Y. Son, L. Gutierrez, K. Diaz, **S. M. H. Hosseini**, X. Zhou, S. Ha, N. Bui. “MAGVIS: A Maglev-based Volumetric Platform for Immersive Telepresence System.” In preparation, 2026.

INDUSTRY EXPERIENCE

DevOps Engineer

Skyroom — Iran's leading video-conferencing platform

Iran

Mar 2020 – Nov 2022

- Operated production infrastructure through a **~100×** COVID-19 scale-up, sustaining platform peaks of **~540K** concurrent users across **33K+** simultaneous live sessions (up to **3K** participants in a single event)
- Managed production Kubernetes clusters; containerized services with Docker on VMware and bare-metal Linux
- Built GitLab CI/CD pipelines; automated provisioning, configuration management, and deployment with Ansible
- Operated the observability stack (Prometheus/Grafana, ELK/EFK logging) and NGINX/HAProxy load balancing

TECHNICAL SKILLS

Languages: C, C++, CUDA, Python, Java, Bash, SQL, JavaScript

ML systems: PyTorch, NCCL, DeepSpeed, distributed training

Systems & Networking: Linux, WebRTC/SFU (Jitsi Videobridge), raw sockets, GStreamer, OpenMP

Infrastructure: Kubernetes, Docker, Spark, gRPC, GCP, MinIO, GitLab CI, Ansible, VMware, NGINX, HAProxy, Prometheus, Grafana, ELK/EFK

HONORS & AWARDS

Chevening Scholarship, UK Government — one of two recipients selected from Iran (2024)

Dean's & Departmental Excellence Fellowship, University of Colorado Boulder (2025)

Iranian National Computer Olympiad — ranked 33rd nationally (2022); **President (elected)**, CE Student Association, Ferdowsi (2019 – 2020)

SERVICE

Reviewer, IEEE Transactions on Mobile Computing (TMC), 2026