

Tokey Tahmid

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SUMMARY

Research Associate with a Master's degree in Computer Science and a research background in developing performance analysis tools using modern C++, multithreading and concurrency, GPU programming models, and Git-based workflows to optimize performance for HPC and AI workloads.

SKILLS

Programming: C++, C, CUDA, OpenCL, HIP, Python, and object-oriented programming

Performance Analysis Tools: PAPI, ROCprofiler-SDK, NVIDIA Nsight, perf, TAU, Score-P, HPCToolkit, VampirTrace, Intel Gaudi Profiler, PyTorch Profiler, and TensorBoard

AMD/ROCm Ecosystem and Tools: ROCprofiler, HIPCC, ROCgdb, AMD SMI, RCCL, rocSOLVER, and rocBLAS

HPC-AI: GPU programming, GPU architecture, System-level performance, Multithreading, Concurrency, GPU performance profiling, Mixed Precision, Deep Learning, Reinforcement Learning, and Large Language Models

OS and CI/CD: Linux, MacOS, Windows, Docker, Kubernetes, and Git

Communication: Effective team communication, Logical Analysis, and documentation writing

WORK EXPERIENCE

Innovative Computing Laboratory (ICL) | Research Associate | Tennessee, USA | Feb 2025 – Present

- Developing and maintaining Performance API (PAPI) components for AI architectures (Gaudi, Cerebras) and GPUs (AMD, NVIDIA, Intel) using modern C++, as documented in publication [1]

Innovative Computing Laboratory (ICL) | Research Assistant | Tennessee, USA | Jan 2023 – Jan 2025

- Developed an optimized scientific AI/ML benchmark software (**5 models + ~7.1 TB of datasets**), achieving a **45% cost reduction** in benchmarking and evaluation; documented in publication [2]

TENNLab Neuromorphic UTK | Graduate Research Assistant | Tennessee, USA | May 2023 – Dec 2024

- Developed a GPU accelerated, scalable, and optimized reinforcement learning framework, achieving **4.26× speed-up and 2.25× more energy efficiency**; documented in two publications [3, 4]

National Renewable Energy Laboratory (NREL) | Graduate Intern | Colorado, USA | May 2024 – Aug 2024

- Developed performance optimization techniques for real-world HPC and AI workloads, achieving a **speedup of ~2.05× and 80.75% more energy efficiency**, documented in publication [5]

EDUCATION

Master's in Computer Science | University of Tennessee, Knoxville | CGPA: 3.66 | Jan 2023 - Dec 2024

Bachelor of Science in Computer Science | BRAC University | CGPA: 3.27 | Jan 2017 - Dec 2021

PUBLICATIONS

[1] PAPI Support for Specialized AI Architectures. SC25 (PDSW'25).

[2] Towards the FAIR Asset Tracking Across Models, Datasets, and Performance Evaluation Scenarios. HPEC2023.

[3] SpikeRL: A Scalable and Energy-efficient Framework for Deep Spiking Reinforcement Learning. ICONS2025.

[4] Towards Scalable and Efficient Spiking Reinforcement Learning for Continuous Control Tasks. ICONS2024.

[5] Low Precision for Lower Energy Consumption. ASCR Energy Efficient Workshop 2024.