Zainul Abideen Sayed

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EDUCATION

Ph.D. Computer Science, University at Buffalo, The State University of New York — Expected 2026
Research Assistant at SCoRe (Scalable Computing Research Lab)
Developed SCoOL framework for solving optimization problems

Bachelor of Computer Science, Mumbai University — 2016
GPA: 7.15/10
Founding member and Lead of student-led club for conducting workshops and hackathons

EXPERIENCE

Software Engineer — Sept 2017 - Jan 2021
Wolfe Research, LLC — *Mumbai, India*

- Utilized AWS services: Boto3, CloudWatch, and Lambda to manage infrastructure and made it more robust
- Developed data pipelines, it deliver time-sensitive data to clients using HTTPS, S3, and SFTP
- Designed cloud tools for fault isolation and reporting, boosting system resilience and reliability
- Created R-Shiny dashboards, sourcing data from EDGAR, third-party vendors, local DB, S3, and ElasticSearch. Integrated with Quant logic, dashboards swiftly deliver key insights, replacing hours of manual work

Software Engineer — Oct 2016 - Sept 2017
Haptik — *Mumbai, India*

- Created a Python library turning user chat inputs into valid cron patterns for date, time, and frequency
- Built backend for an on-the-fly Chatbot creation framework with Django, MongoDB, and Elasticsearch
- Implemented an automated reminders chatbot backend for Haptik, requiring no human intervention

PUBLICATION

SCoOL – Scalable Common Optimization Library — Dec 2023
IEEE International Conference on High Performance Computing (HiPC) — DOI: 10.1109/HiPC58850.2023.00045

End-to-end Bayesian Networks Exact Learning in Shared Memory — Apr 2024
IEEE Transactions on Parallel and Distributed Systems (TPDS) — DOI: 10.1109/TPDS.2024.3366471

PROJECTS

SCoOL A programming model and parallel runtime for solving optimization problems, enabling efficient execution on shared or distributed memory computers. Implemented scalable runtime for distributed clusters, featuring work stealing and task rebalancing algorithms. Demonstrated strong scaling on a 1,280-core cluster, outperforming existing solvers in Bayesian networks learning(https://gitlab.com/SCoRe-Group/scool/)

SABNA Contributed to SABNA an open-source software suite of efficient algorithms for exact (i.e., globally optimal) Bayesian networks learning. The main idea behind toolkit is to combine various data optimization techniques and advanced parallel algorithms to achieve scalable implementations capable of processing data instances with hundreds of variables (https://gitlab.com/SCoRe-Group/SABNA-Release)

TacoDB (Spring' 23) Built key components of a mini RDBMS, closely resembling PostgreSQL, including file I/O interface, buffer manager, data layout, table interface, B-tree index, and query processor

SKILLS

Technical Skills	C++, MPI, OpenMP, HPX, CUDA, Python, R, Java
Other	System Design, Project Management, Performance Improvement, User Interface