Subhadeep Bhattacharya

Contact
Information

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Research Interests • High Performance Computing: Parallel Programming Models, Communication Runtime

• Deep Learning: Distributed Deep Learning Frameworks

• Bioinformatics: Microarray Data Analysis

EDUCATION

Florida State University, Tallahassee, Florida PhD, Computer Science, CGPA 3.972/4.00

August, 2017 - Till Date

St. Thomas' College of Engineering and Technology, Kolkata, India

B.Tech., Information Technology, DGPA 8.54/10.00 August, 2011 - August, 2015

EXPERIANCE

Department of Computer Science, Florida State University, Tallahassee, Florida

• Graduate Teaching Assistant

Working as a Teaching Assistant for -

Computer Fluency (CGS 2060/2100) Jan, 2020 - Till Date Computer Organization II (CDA 3101) August, 2019 - Dec, 2019 Computer Architecture (CDA 5155) August, 2019 - Dec, 2019 Introduction to Operating Systems (COP 4610) August, 2017 - December 2017

• Graduate Research Assistant

August, 2017 - May, 2019

Working in Computer Architecture and SysTems Research Lab (CASTL) under the supervision of Professor Dr. Weikuan Yu

MCS Division, Argonne National Laboratory, Lemont, Illinois

• Summer Research Aide

May, 2019 - Aug, 2019

Explored GPU Aware Reduction Offloading Inside MPI Library on Heterogeneous Clusters under the supervision of Dr. Min Si and Dr. Giuseppe Conqiu. Achieved around 1.9x performance improvement for small and medium message sizes without using GPUDirect features.

Infosys, Bengaluru, India

• Systems Engineer

Sept, 2015 - August, 2017

Worked as a Java and NodeJS application developer for developing Application and Microservices layer for different web applications specifically MyAccount and NBN+ for the Australian telecommunications company Telstra

Research **PROJECTS**

- Optimization Techniques for Distributed Deep Learning Framework: Currently working on reducing the communication bottleneck for the training of deep models using distributed Deep-Learning framework.
- OpenSHMEM-X Libfabric Conduit Implementation: Worked on a project with Oak Ridge National Laboratory for implementing a communication conduit for OpenSHMEM-X using OFI Libfabric and also tried to improve its portability and performance.
- SHMEMCache on Hybrid Memory Architecture: Worked on a project with Oak Ridge National Laboratory to enable Hybrid Memory Scheme for SHMEMCache.
- Spark: Study of different shuffling mechanisms present in Spark and implemention of a custom logger for collecting different parameters related to shuffling phase to understand their characteristics.

Subhadeep Bhattacharya, Shaeke Salman, Manjunath Gorentla Venkata, Harsh Kundnani, Neena Imam, Weikuan Yu. An Initial Implementation of Libfabric Conduit for OpenSHMEM-X. OpenSHMEM 2018: Fifth Workshop on OpenSHMEM and Related Technologies (Baltimore, Maryland). August 2018.

- Programming Languages: C/C++, Python, Java, Matlab, Javascript, Jquery, NodeJS, TypeScript
- Frameworks: OpenSHMEM, UCX, OFI Libfabric, PyTorch, Horovod
- Analysis of Microarray data to find out Important and Informative Genes: A system implemented using Matlab to study the gene expression from Microarray data set, estimate the missing gene expressions and determine an ensemble of classifiers to correctly identify the diseased samples from the non-diseased one

SELECTED Publication

TECHNICAL SKILLS Academic Projects