

MANOJ P. SAHA

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SUMMARY

- Ph.D. candidate with experience in emerging Key Value (KV) Stack, Solid State Drive (SSD) performance analysis, data indexing, and deep learning.
- Research interests in emerging data storage systems, data indexing, databases, workload characterization, persistent memory, and machine learning.
- Development experience in C/C++ and Python.
- Looking for summer internship.

EDUCATION

Ph.D. in Computer Science Florida International University, USA. CGPA: 4.0/4.0	Expected May 2023
M.S. in Computer Science University of Texas at El Paso, USA. CGPA : 3.72/4.0	May 2019
MBA (Marketing) University of Dhaka, Bangladesh. CGPA: 3.56/4.0	Nov. 2014
B.S. in Electronic & Telecommunication Engineering North South University, Bangladesh. CGPA: 3.53/4.0	Apr. 2009

TECHNICAL SKILLS

General purpose programming: C/C++, Python, Java, JavaScript, PHP

Numerical programming: TensorFlow, Keras, NumPy, Pandas, Matlab

Statistical programming: R, SAS

Database: SQL, RocksDB, Aerospike, MinIO

Data Visualization: MS Power BI

Misc. : Bash, Assembly, Git, L^AT_EX, MS Azure

PUBLICATIONS

- **Manoj P. Saha**, Adnan Maruf, Bryan S. Kim, Janki Bhimani, “**KV-SSD: What is it Good For?**,” 58th Design Automation Conference, San Francisco, Jul 2021. [Accepted]
- Danlin Jia, **Manoj P. Saha**, Janki Bhimani, Ningfang Mi, “**Performance and Consistency Analysis for Distributed Deep Learning Applications,**” 39th IEEE International Performance Computing and Communications Conference, Virtual, Nov 2020.
- **Manoj P. Saha**, Janki Bhimani, “**RHIK - Resizable Hash-based Indexing for KV-SSD,**” 12th USENIX Workshop on Hot Topics in Storage and File Systems, Jul 2020. [Accepted as poster, withdrawn by author for further improvement]

RESEARCH PRESENTATIONS

- **Manoj P. Saha**, Janki Bhimani, “**Towards Developing a High-performance, High-reliability Key Value-SSD,**” Poster presented at FIU SCIS Research Day, Oct 2019.
- Baolin Li, Tirthak Patel, Adnan Maruf, **Manoj P. Saha**, Janki Bhimani, Devesh Tiwari, “**Do Temperature and Humidity Affect SSD Performance?,**” Poster presented at FIU SCIS Research Day, Oct 2019.

RESEARCH EXPERIENCE

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|---|---------------------|
| Graduate Assistant
Florida International University | Aug. 2019 - present |
|---|---------------------|
- Designing a learned indexing scheme for persistent storage devices using machine learning techniques [C/C++].
 - Developing a deep learning framework to detect bias in trained models by leveraging Intel Optane Persistent Memory devices [C/C++].
 - Developing an I/O behavior modeling framework for emerging persistent storage devices [Go, C++].

- Proposed a new resizable hash-based index for emerging Key Value-SSD (KV-SSD) devices on OpenMPDK KV Emulator [C++].
- Collected and analyzed NVMe SSD performance data to understand I/O behavior of emerging KV Stack under a wide variety of workloads [C++, Python, Bash].
- Analyzed SSD performance under different temperature and humidity settings in the operating environment [Python].

Research Assistant

Sep. 2016 - Aug. 2018

University of Texas at El Paso

- Developed unsupervised machine learning models to capture temporal information evolution [Python, TensorFlow].
- Built machine learning models to analyze evolution of software security threats [Python, TensorFlow].
- Created corpus of news articles for natural language processing tasks [Python].

ADDITIONAL EXPERIENCE

Teaching Assistant

Aug. 2019 - present

Florida International University

- Worked as a teaching assistant for different courses including Systems Programming [C] and Programming I [Java].
- Implemented semi-automatic grading infrastructure for programming assignments.

Teaching Assistant

Sep. 2017 - May 2019

University of Texas at El Paso

- Graded coding assignments and assisted faculty in setting test questionnaire for different Computer Science courses including Computer Architecture [C] and Data Structures [Python].
- Taught multiple classes as substitute instructor in Data Structures and Automata courses.

** Also worked in different engineering and leadership roles in telecommunications and digital marketing industry.

PROJECTS

- **Cdiscount.com image classification challenge on Kaggle**

Developed CNN models for massive multi-class image classification [Python, TensorFlow, Keras].

- **Influencer detection from Yelp dataset**

Developed machine learning models to identify local influencers from Yelp reviews [Python, SQL].

- **Google Play app dataset creation and review analysis**

Implemented web crawlers for large-scale data collection and built machine learning models to analyze sentiment in app reviews [Python, SQL].

COURSES

- **Computer Systems:** Data Storage Systems, Operating Systems
- **Artificial Intelligence:** Artificial Intelligence I, Data Mining, Deep Learning, Statistical Programming, Quantitative Analysis

AWARDS

- Institute of Defense and Security Tuition Support Scholarship, University of Texas at El Paso (2018)
- Anita Mochen Loya Graduate Engineering Fellowship, University of Texas at El Paso (2016)