Seattle, WA, US
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MOHAMMAD ABU OBAIDA

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SUMMARY

- Designed, developed and delivered 3 software systems in AWS RDS *Amazon Aurora* cloud database.
- Developed critical infrastructure for improving availability, capacity, resource management of *Amazon Aurora*.
- Software system design/code reviewer, drive cross team functionality. Mentored SDE and interns at AWS.
- Expert in developing resource constrained multi-process systems, efficient algorithms and simulators.
- R&D experience in distributed, parallel systems, cloud, databases, simulation and performance modeling.
- Python, C, C++, SQL, Bash, Git, Linux, AWS, JIRA, Java, MPI, CUDA, Containers, Open vSwitch, HPC, PostgreSQL.

EXPERIENCE (8+ YEARS, 2.5 YEARS INDUSTRY, 6 YEARS RESEARCH)

Software Development Engineer 2 **Amazon AWS** 1/2019 – date **(2 yrs, 6 mo.)**

- Improved resource management, capacity, scalability and availability of AWS Amazon Aurora database.
- Designed and developed functionality to provide critical resource diagnostic spanning several components of Amazon Aurora PostgreSQL cloud database to drive architectural redesigns, system improvements.
- Experienced in large-scale distributed systems, software release, software merges, deployments, CI/CD.

Graduate Intern **Los Alamos National Laboratory, NM** 05/2015 – 07/2015 **(3 mo.)**

- Improved accuracy of supercomputing simulation by implementing torus interconnection prototype.

Research Assistant **Florida International University** 01/2013 – 12/2018 **(6 years)**

- Performance modeling research experience- conducted research to develop novel algorithms, systems and simulators for predicting parallel application and system performance.
- Designed, implemented and deployed efficient distributed real-time simulator, improved throughput by 5x.

EDUCATION

Miami, FL **Florida International University** Spring 2013 – Fall 2018

- M.Sc. in Computer Science, Degree awarded on Summer 2018.
- Ph.D. Candidate in Computer Science, (Till Fall 2018) Dissertation Proposal- Performance Prediction of Large Scale Parallel Applications and Systems using HPC Simulation and Analysis based Modeling.

Bangladesh **Dhaka Univ. of Engineering & Technology** Spring 2008 – Fall 2011

- B.S. in Computer Science and Engineering, Graduated January 2012. (GPA in Top 5 in a class of 67).

TECHNICAL PROJECTS

github.com/summonersrift

- **Amazon Aurora PostgreSQL (2019-2020)**: 3 projects on cloud database resource management, serverless.
- **Performance Prediction Toolkit (PPT)** (2015-2018). Parallel application and system performance modeling toolkit implemented on Simian parallel discrete-event simulator. *Python – github.com/lanl/PPT*
- **PyPassT** (2017-2018). HPC Simulation model construction using program analysis. *C/Java/Python; PPT*.
- **Workload-Scheduler** (2017) HPC workload, job scheduling, task mapping modeling. *Python, PPT*.
- **SDNScaleNet** (2016). Data-center emulation using Linux namespaces, OVS w/ Pox Controller. *Python, Bash*.
- **Distributed Simulator** (2016) Low-latency, distributed hybrid real time simulator. *C++; PRIME; SDNScaleNet*.
- **PrimoGENI Constellation** (2013 – 2015). Distributed experimentation on NSF GENI testbed. *C/C++/Java*.
- **RED/XCP** (2011) Studied TCP variants for congestion control algorithms in NS-2. *Tcl; Perl*.

PUBLICATIONS

1. **M. Obaida**, J. Liu, G. Chennupati, N Santhi and S. Eidenbenz, "Parallel Application Performance Prediction Using Analysis Based Models and HPC Simulations", ACM SIGSIM PADS 2018, Rome, Italy.
2. **M. Obaida** and J. Liu, "Simulation of HPC Job Scheduling and Large Scale Parallel Workloads", WSC 2017, NV.
3. **M. Obaida** and J. Liu, "On Improving Parallel Real-Time Network Simulation for Hybrid Experimentation of Software Defined Networks", SIMUTOOLS 2017, Hong Kong.
4. K. Ahmed, **M. Obaida**, J. Liu, G. Chapuis, N. Santhi and S. Eidenbenz, "An Integrated Interconnection Network Model for Large-Scale Performance Prediction", ACM SIGSIM PADS 2016, Alberta, Canada.