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MOHAMMAD ABU OBAIDA

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SUMMARY

- Ph. D. in Computer Science; R&D experience in parallel and distributed systems, simulation and modeling.
- Expert in developing efficient algorithms, multi-process systems and simulators with Python, C/C++, MPI.

LANGUAGES & TECHNOLOGIES

- Python; C++; C; Bash; SQL; Java; Cuda; OpenARC; stockstats; ccxt; Weka; SciPy; Container Virtualization.
- MPI; Linux Namespaces; LXC; Docker; Open vSwitch; SDN; Mininet; OpenVZ; Pox; Jsch, Simulation.

EXPERIENCE

Graduate Intern **Los Alamos National Laboratory, NM** **Summer 2015**

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

Research Assistant **Florida International University** **Spring 2013 – Spring 2018**

- Conducted Ph.D. research to develop novel algorithms, systems and simulators for predicting parallel application and system performance which improves accuracy of existing works.
- Designed, implemented and deployed efficient distributed real-time simulator, improved performance by 5x.
- (2013) TA: Instructed and graded Programming III, Telecommunications Tech. Appl. and Spreadsheet Analysis.

EDUCATION

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

- M.Sc. in Computer Science, Spring 2018. GPA: 3.49/4.
- Ph.D. in Computer Science, Expected Fall 2018.
  - **Dissertation**: Parallel Application and System Performance Prediction Using Analysis Based Supervised Learning Models and HPC Simulation.

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

- B.S. in Computer Science and Engineering, Graduated January 2012. GPA: 3.64/4.

TECHNICAL EXPERIENCE

Large Projects / Systems `github.com/summonersrift`

- **Performance Prediction Toolkit (PPT)** (2015-2018). Parallel application and system performance prediction 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*.
- **SDNSimpleNet** (2016). Data-center emulation using Linux namespaces, OVS w/ Pox Controller. *Python, Bash*.
- **Distributed Simulator** (2016) Low-latency, distributed hybrid real time simulator. *C++; Linux; SDNScaleNet*.
- **PrimoGENI Constellation** (2013 – 2015). Distributed experimentation on NSF GENI testbed. *C++, Perl, Java*.

Small Prototypes / Class Projects

- **Trading Bot** (2018) Cryptocurrency trader using financial indicators. *Python; stockstats; CCXT; QuantConnect*
- **Car Parking Reservation** (2015) Object Oriented software development project. *Java; Papyrus; MySQL*.
- **RED/XCP** (2011) Studied TCP variants for congestion control algorithms in NS-2. *Tcl; Perl*.

RECENT PUBLICATIONS

1. **M. Obaida**, J. Liu, G. Chennupati, N Santhi and S. Eidenbenz, "Parallel Application Performance Prediction Using Analysis Based Models and HPC Simulations", [In-press] 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.