

Md Rajib Hossen

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Summary

Four years of research experience in Microservices, Edge Computing, Machine Learning, Distributed Systems, and three years of work experience in software engineering, cloud computing, machine learning. I thrive in situations where the solutions to unprecedented problems are unknown.

Education

Ph.D. in Computer Science | The University of Texas at Arlington | Arlington, TX **Expected Graduation: July 2023**

GPA: 4.0/4.0 | Relevant Courses: Advanced Algorithms; Machine Learning; Cloud Computing; Distributed Systems

B.Sc. in Computer Science | Khulna University of Engineering & Technology | Bangladesh **Completed: May 2015**

GPA: 3.63/4.0 | Relevant Courses: Data Structure; Algorithms; Machine Learning; Data Mining

Research and Work Experiences

Graduate Student Researcher | The University of Texas at Arlington | Arlington, TX **Aug 2018 – Cont.**

- Reduced microservice CPU resource by 33% compared to commercial resource managers (e.g., Kubernetes)
- Developed an intelligent agent using Reinforcement Learning to offload tasks from mobile to unreliable edge servers
- Developed a practical microservice resource autoscaler on top of Kubernetes that autoscale resources of containers based on custom metrics and finds efficient resource allocations without requiring heavy training data collections.
- Developed an edge offloading engine that takes mobile tasks as inputs and decide to execute the tasks in either mobile, or edge or cloud

Software Engineer | Goava Sales Intelligence AB | Dhaka, Bangladesh **Jan 2018 - July 2018**

- Recognition of perfect API Design and Documentation by the frontend team
- Developed APIs for providing personalized recommendations, custom filtering, and targeted companies for B2B
- Developed an API Server that provides results of queries from Elasticsearch and S3, and apply Machine Learning to satisfy client requirements

Software Engineer | IPvision Soft Ltd | Dhaka, Bangladesh **Sep 2016 - Dec 2017**

- Improved the efficiency of a cluster deployment of 50 Node by 75% using automation scripts in Python
- Reduced cloud computing cost by 83% compared with Amazon AWS by deploying a private cluster with 99% uptime
- Developed a cloud dashboard using Django framework to provide monitoring for the private cluster using OpenStack, Ceph, GlusterFS, and custom API

Jr. Software Engineer | Workspace Infotech Ltd | Dhaka, Bangladesh **July 2015 - Aug 2016**

- Increased client's revenue by delivering backend services of mobile applications several weeks earlier
- Developed a complete application including backend and front system for mobile applications, and websites

Skills

- **Programming Languages:** Python, SQL, C++, Java
- **Tools:** Kubernetes, Docker, Jaeger, Prometheus, ELK, Linux, RabbitMQ, AWS
- **Technologies:** Pytorch, Hadoop, Django, Flask, Virtualization

Publications

- **Md Rajib Hossen**, Mohammad Islam, Kishwar Ahmed. 2022. Practical Efficient Microservice Autoscaling with QoS Assurance. The 31st International Symposium on High-Performance Parallel and Distributed Computing (HPDC 2022)
- **Md Rajib Hossen**, Mohammad Islam. 2022. Towards Efficient Microservices Management Through Opportunistic Resource Reduction. The 13th International Conference on Cloud Computing, GRIDs, and Virtualization
- **Md Rajib Hossen**, Mohammad Islam. 2021. Mobile Task Offloading Under Unreliable Edge Performance. SIGMETRICS Perform. Eval. Rev. 48, 4 (March 2021), 29–32