Moshiur Rahman

Curriculum Vitae

▬▬▬ Summary

I am a System Architect and Software Engineer with extensive experience in telecommunications and automotive industries. My work primarily focuses on connected and autonomous vehicles.

▬▬▬ Relevant Experience

- Vehicle telematics systems design;
- Perception and path planning for autonomous vehicles;
- Machine Learning (ML), Deep Learning (DL), Computer Vision (CV);
- Hands-on experience with ML/DL/CV platform and tools: Scikit-learn, Tensorflow, Keras, PyTorch, Numpy, Pandas, OpenCV. My personal projects can be found in **my github profile**;
- Strong programming skills in Python, C++;
- 5G Radio Access Networks (RAN), Core Network (CN) and Operation and Maintenance (OAM) network architectures;
- Hands-on experience with cloud computing (OpenStack) and container (Docker, Kubernetes) technologies;
- Experience with network simulators: Mininet, NS3, GNS3;
- In-depth knowledge on TCP/IP, routing and switching protocols. Hands-on experience with routers, switches from different vendors;
- Jira, Confluence.

▬▬▬ Experience

Aug, 2019 - Present

Connectivity Systems Engineer, *Ford Motor Company (Contractor via Insight Global)*, Ottawa.

- End-to-end system design architect for connected and non-connected vehicle features with particular focus on in-vehicle infotainment (IVI) systems and CV2X.
- Take feature specifications(WHAT) from feature owners and translate them to system requirements (HOW) to be delivered by IVI software teams.
- Research relevant standard specifications and best practices.
- Drive vehicle feature implementation through Agile process.
- Research on autonomous vehicle (self driving car) perception, e.g., object classification, tracking, semantic segmentation, sensor fusion.

Nov, 2017 - Aug, 2019	**Senior Engineer**, *Huawei Technologies Canada*, Ottawa.
	○ Research on big data analytics and machine learning technologies for network management and orchestration.
	○ Devised novel data analytics management framework for 5G networks (patent pending).
	○ Devised capacity and coverage optimization techniques for 5G networks (patent pending).
	○ Devised multi-level intent driven network management techniques (patent pending).
	○ 5G RAN-centric data collection and analytics; enhanced network automation for 5G core network using network data analytic function (NWDAF); management data analytics (MDA) and self-organizing network (SON) for 5G OAM networks.
	○ Actively contributed to the 5G 3GPP SA5 standard specifications (TS 28.533, TS 28.552, TS 28.554, TR 28.812, and TR 28.861).
	○ I was a delegate to the 3GPP SA5 standard meetings.
May, 2016-Nov, 2017	**Solution Architect/ Cloud Services Engineer**, *Center of Excellence in Next Generation Networks (CENGN)*, Ottawa.
	○ Solution architect for proof-of concept projects in the areas of emerging networking technologies such as cloud computing, SDN/NFV and IoT.
	○ Lead a team of cloud services engineers and interns.
	○ Technical interface for CENGN customers for formulating the network architecture and system design required for PoC projects.
	○ Deployed OpenStack-based cloud computing platform using Mirantis distribution.
	○ Integrated Wind River's Titanium Edge Cloud platform with an OpenStack-based production cloud platform.
	○ Deployed a virtual evolved packet core (vEPC) using Rancher's Kubernetes distro.
	○ Integration of Atrium SDN router in an OpenStack-based cloud platform.
	○ Created technical deliverables, e.g., project reports, white papers and other technical documents.
	○ Participate in writing funding proposals for various government projects. One of the funding proposals for building an Ontario-wide cloud-based network received more than $63 million from the government of Ontario.
2015–2016	**Wireless Researcher (intern)** , *Huawei Technologies Canada*, Ottawa.
	Research and development on 5G radio access networks. I had built a system-level simulator for research in 5G cellular networks, specifically for full duplex (FD) transmission systems. Developed scheduling algorithm for C-RAN and D-RAN deployment of FD networks.
2011–2015	**Research Assistant**, *ETS, University of Quebec*, Montreal.
	Developed novel architectural frameworks for wireless access network virtualization and also analyzed the frameworks from a techno-economic perspective. Studied differentiated service provisioning in a heterogeneous wireless network environment using SDN paradigm. Developed SDN applications for virtualization, traffic offloading and load balancing using Python-based SDN controller platform.
2010–2011	**Research Intern**, *INRS-EMT, University of Quebec*, Montreal.
	Developed hybrid automatic repeat request (HARQ) algorithms for 4G networks.
2005–2008	**Telecom Network Engineer**, *Different Telecom Operators*, Dhaka, Bangladesh.
	I worked for several telecom operators and vendors in radio access and core networks.

Publications

I have extensive experience in writing technical and scientific articles. A list of my published articles is available in my **Google Scholar** profile.

Education

2011–2016   **Ph.D. in Electrical Engineering**, *ETS, University of Quebec*, Montreal, Canada.

2008–2011   **MSc in Telecommunications Engineering**, *University of Trento*, Trento, Italy.

2000–2005   **BSc in A.P. Electronics and Communications Engineering**, *University of Dhaka*, Dhaka, Bangladesh.