Mohammad Rajiullah, Ph.D.

Senior Lecturer (Universitetslektor)
Department of Computer Science, Karlstad University, Sweden
dr.mohammad.rajiullah@gmail.com
github.com/mrajiullah linkedin.com/in/mrajiullah

Research Profile

Senior Lecturer in Computer Science specializing in advanced 5G/6G network architectures, empirical performance evaluation, and large-scale operational mobile network measurements. My research investigates how advanced 5G/Beyond-5G capabilities can be systematically leveraged to enhance Quality of Service (QoS) and Quality of Experience (QoE) in immersive remote education and smart healthcare systems.

My work integrates experimental networking platforms, cellular IoT optimization, satellite–terrestrial integration, and machine-learning-driven performance modeling. I currently serve as Principal Investigator in EU Horizon SNS projects and actively contribute to Horizon Europe 6G initiatives.

Academic Appointments

Senior Lecturer (Universitetslektor), Karlstad University, Sweden 2023–Present

Research Engineer, Karlstad University, Sweden 2018–2022

Postdoctoral Fellow, Karlstad University, Sweden 2016–2018

Ph.D. Candidate and Project Assistant, Karlstad University, Sweden 2009–2015

Education

Ph.D. in Computer Science, Karlstad University 2015
Thesis: *Towards a Low Latency Internet: Understanding and Solutions*

Licentiate in Computer Science, Karlstad University 2012

M.Sc. in Global Information and Telecommunication Studies, Waseda University, Japan 2007

B.Sc. in Computer Science and Information Technology, Islamic University of Technology 2002

Research Funding & Leadership

Principal Investigator

SIMONE – Funded through Open Call, EU Horizon SNS (IMAGINE-B5G) 2024–2025
Evaluating Immersive Communication for Enhanced Remote Education.

MAGDALENA – Funded through Open Call, EU Horizon SNS (6G-SANDBOX) 2024
Measuring 5G and Satellite Network Integration.

Research Contributor

6G-PATH (Horizon Europe SNS) 2024–Present

INTERACT-B5G – Funded through Open Call, EU Horizon SNS (TARGET-X) 2024–2025

5GENESIS (H2020) 2019–2021

MONROE (H2020) 2016–2018

NEAT (H2020) 2016–2018

RITE (FP7) 2012–2015

Research Contributions

- Developed empirical methodologies for 5G non-standalone and standalone performance evaluation.
- Designed and evaluated an immersive remote education platform (SIMONE) leveraging advanced 5G/Beyond-5G architectural features to enhance Quality of Experience (QoE) in XR-enabled learning environments.
- Applied advanced 5G/6G architectural capabilities (e.g., low-latency communication, network slicing, intelligent resource management) to enhance user experience in remote education and smart healthcare systems.
- Published large-scale datasets of 4G, NB-IoT and 5G operational measurements.
- Designed an ML-driven optimization framework for NB-IoT configuration.
- Conducted standardized QoS/QoE assessments for Beyond-eMBB services.
- Evaluated Starlink throughput predictability for 5G backhaul integration.
- Implemented transport-layer optimizations in Linux and FreeBSD.

Publications

Summary: 16 Journal Articles, 29 Conference/Workshop Papers, 1 Book Chapter.
Continuous peer-reviewed publications (2010–2025).
Publications in IEEE Internet of Things Journal, IEEE Communications Magazine, IEEE Open Journal of the Communications Society, Computer Networks, Journal of Network and Computer Applications, ACM SIGCOMM CCR, WWW.

Selected Journal Articles (2024–2025)

1. Dynamic NB-IoT Configuration: A Machine-Learning-Driven Optimization Framework. IEEE IoT Journal, 2025.
2. Standardized Evaluation of QoS/QoE in 5G and Beyond-5G Systems. IEEE Communications Standards Magazine, 2025.
3. Empirical Performance Analysis and ML-Based Modeling of 5G NSA Networks. Computer Networks, 2024.

4. Large-Scale Dataset of 4G, NB-IoT and 5G Network Measurements. IEEE Communications Magazine, 2024.

Full publication list available upon request or as separate attachment.

Teaching Experience

Karlstad University 2009–Present

Served as course responsible and lecturer for multiple core networking and IoT courses:

- Internet Architecture and Protocol
- Internet of Things
- Operating Systems
- Computer Networking
- Bachelor Project supervision

Responsibilities include course design, examination, and curriculum development.

Doctoral Supervision

Co-supervision of doctoral research in cellular IoT optimization and 5G/6G performance evaluation.

Ph.D. Co-Supervisor

- David Ukwen (2024–Present)
- Muhammad Tahir Abbas (Completed 2025)
  Thesis: Improving the Energy Efficiency of Cellular IoT Devices

Academic Service

Leadership Roles

Program Committee Co-Chair, IEEE VR 2026 Workshop (NESXR'26)

TPC Co-Chair, Swedish National Computer Networking Workshop (SNCNW), 2021

Guest Editor, Special Issue on "Advanced 5G and Beyond Networks," Future Internet (peer-reviewed international journal)

Program Committee Member

EuCNC 2026
ACM CoNEXT (Artifact Evaluation), 2024

Reviewer

Reviewer for IEEE Communications Magazine, IEEE Open Journal of the Communications Society, IEEE Networking Letters, IEEE Transactions on Network and Service Management, IEEE Access, Sensors, Future Internet, EuCNC, and EU Horizon Open Calls.

International Engagement

IETF 87 (Berlin) — IETF 89 (London)

Professional Memberships

ACM • IEEE • SULF

Languages

Bengali (Native)
English (Fluent)
Swedish (Moderate)
Japanese (Basic)