

# Zulqar Nain, Ph.D

Department of Information and Communication Engineering, Yeungnam University, South Korea

✉ [zulqarnain@ynu.ac.kr](mailto:zulqarnain@ynu.ac.kr) [🌐 Personal Website](#) [📄 Linked-in Profile](#)



## EXPERIENCE

Assistant Professor Full-time

**Yeungnam University**

📅 March 2022 – Present 📍 Yeungnam University, South Korea

- Teaching Applied Embedded System (0331-01) course to post-graduate students.
- Conducting Research and Publishing Articles in SCI journals.
- Writing proposals to secure funding for projects.
- Supervising and mentoring graduate students

Technical Lead Full-time (Freelance)

**Mission**

📅 Apr. 2021 – Feb. 2022 📍 Remotely

Project: Virtual Event Platform

- Worked as a technical architect
- Led the software development and performed Code reviews and solution design

Lecturer Full-time

**GPGC Mandian**

📅 2018 – 2019 📍 Abbottabad Pakistan

- Taught the following courses to undergraduate students of BS(CS) and BS(IT).
  - Introduction to Information and Communication Technologies (CSC111)
  - Programming Fundamentals (CSC112)
  - Computer Organization and Assembly Language (CSC233)
  - Digital Logic Design(CSC232)
  - Database Systems (CSC241)
  - Information Security (CSC481)

Lecturer Visiting

**COMSATS University, Islamabad**

📅 2019 – 2019 📍 Abbottabad Pakistan

- Taught the following courses to undergraduate students of BS(SE).
  - Software Engineering Concepts(CSC291)
  - Professional Practices for IT(CSD303)

Full-stack Web Developer Part-Time (Freelance)

**Upwork**

📅 2013 – 2018 📍 Remotely

- PHP(laravel), HTML, CSS, Bootstrap, Javascript, React.js, Node.js, docker, Agile development.

## RESEARCH INTERESTS

- Intelligent routing protocols for optical network-on-chip architectures and IoT devices
- Application mapping approaches for network-on-chip architectures.
- Service offloading (SO) and scheduling in cloud computing.

## TECHNICAL SKILLS

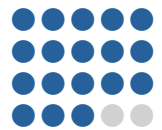
**Programming Languages**

Python

C/C++

PHP/Laravel

Node.js/React.js/Typescript



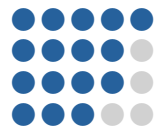
**Simulators**

Cooja Emulator

Nirgam/NoC Tweak

NS3

Matlab



## EDUCATION

Doctor of Philosophy in Information and Communication Engineering

**Yeungnam University**

📅 2019 – 2022 📍 South Korea

- Thesis title: A Reinforcement Learning-Based Intelligent Route Update Scheme for Future Generation IoT Networks.

Master of Science in Computer Science (MS(CS))

**COMSATS University Islamabad**

📅 2016 – 2018 📍 Wah Cantt, Pakistan

- Thesis title: Novel Fault-tolerant Routing Scheme for 2D Mesh Based on Chip Architectures .

Bachelor of Science in Computer Science (BS(CS))

**Virtual University of Pakistan**

📅 2011 – 2015 📍 Lahore, Pakistan

# PUBLICATIONS

---

## Journal Articles

Indexed by SCIE

1. Muhammad Sshareef Mekala, Gaurav Dhiman, Gautam Srivastava, **Zulqar Nain**, Haolin Zhang, Wattana Viriyasitavat, and G.P.S.Varma, "A DRL-Based Service Offloading Approach Using DAG for Edge Computational Orchestration" IEEE Transactions on Computational Social Systems, Early Access, 2022. Impact Factor = 5.36.
2. **Zulqar Nain**, Arslan Musadiq, Yazdan Ahmad Qadri, Ali Nauman, Muhammad Khalil Afzal, and S W Kim, "RIATA: A Reinforcement Learning-Based Intelligent Routing Update Scheme for Future Generation IoT Networks" IEEE Access, vol. 9, pp.81161-81172, 2021. Impact Factor = 3.367.
3. **Zulqar Nain**, Rashid Ali, Sheraz Anjum, Muhammad Khalil Afzal, and S W Kim, "A Network Adaptive Fault-Tolerant Routing Algorithm for Demanding Latency and Throughput Applications of Network-on-a-Chip Designs" MDPI Electronics, vol. 7, no. 7, pp. 1076, 2020. Impact Factor = 2.397.
4. Arslan Musaddiq, **Zulqar Nain**, Yazdan Ahmad Qadri, Rashid Ali, and S W Kim, "Reinforcement Learning-Enabled Cross-Layer Optimization for Low-Power and Lossy Networks under Heterogeneous Traffic Patterns" MDPI Sensors, vol. 20(15), pp. 4158, 2020. Impact Factor = 3.576.
5. A Musaddiq, YB Zikria, **Zulqar Nain**, and S W Kim, "Routing protocol for Low-Power and Lossy Networks for heterogeneous traffic network" EURASIP Journal on Wireless Communications and Networking, vol. 21, 2020. Impact Factor = 1.408.
6. Waqar Amin, Fawad Hussain, Sheraz Anjum, Sarzamin Khan, Naveed Khan Baloch, **Zulqar Nain**, and S W Kim, "Performance Evaluation of Application Mapping Approaches for Network-on-Chip Designs" IEEE Access, vol. 8, pp. 63607-63631, 2020. Impact Factor = 3.367
7. Ali Nauman, Muhammad Ali Jamshed, Rashid Ali, Korhan Cengiz, **Zulqar Nain**, and S W Kim, "Reinforcement learning-enabled Intelligent Device-to-Device (I-D2D) communication in Narrowband Internet of Things (NB-IoT)" Computer Communications, vol. 176, pp. 13-22, 2021. Impact Factor = 3.167.

---

## International Conference Papers

1. Ali Rashid, **Zulqar Nain**, S W Kim, and Seok Kim Hyung, "Exponentially Distributed Random Access in LTE-A networks", in International Symposium on Networks, Computers and Communications (ISNCC) Montreal/Canada/2020.
2. **Zulqar Nain**, Arslan Musaddiq, Yazdan Ahmed Qadri, Sung Won Kim, "History-Aware Adaptive Route Update Scheme for Low-Power and Lossy Networks", in International Conference on Information and Communication Technology Convergence (ICTC) Jeju/South Korea/2021.

---

## Patents

1. **Zulqar Nain**, and Sung Won Kim, "Method for Internet of Thing routing based on Q-learning, recording medium and device for performing the method".
2. Ali Nauman, **Zulqar Nain**, and Sung Won Kim, "Method of Radio resource scheduling for beyond-5G network using artificial intelligence" (Submitted).


---

## Book Chapters

# REFEREES

---

## Dr. Sung Won Kim (Ph.D. Advisor)

 swon@yu.ac.kr

Professor

 Dept of Info and Comm Eng, Yeungnam University, South Korea

---

## Dr. Murtaza Ahmed Siddiqi

 MurtazaAhmed.Siddiqi@utsa.edu

Assistant Professor


 Dept of CS, The University of Texas at San Antonio

---

## Dr. Nazeer Muhammad (MS Advisor)

 nazeer.muhammad@fecid.paf-iast.edu.pk

Assistant Professor

 Dept of CS, Pak-Austria Fachhochschule Institute of Applied Sciences and Technology, Haripur, Pakistan

---

1. Yazdan A. Qadri, Ali Nauman, **Zulqar Nain** , Rashid Ali, and Sung Won Kim, "cobots for human surgery" in *Industry 5.0 : Towards a New Revolution and a Human-Centric Solution* by De Gruyter or Walter de Gruyter GmbH, Genthiner, Germany. (Submitted)