ERCIM fellowship Programme
Final scientific report

Fellow	Nishu **Gupta**

Host Organisation	NTNU Gjøvik, Norway

Scientific coordinator	Mohammad **Derawi**

I – SCIENTIFIC ACTIVITY DURING YOUR FELLOWSHIP

During the fellowship I was involved in
  (i) Developing an in-depth understanding of Internet-of-Things Technologies like IQRF, Lora, SigFox, NB-IoT, etc.
  (ii) Performing radio propagation analysis of IQRF devices under different scenarios.
  (iii) Working towards continuous development of IoT System Integration.
  (iv) Collaborating with various research/academic partners to mobilize research and development activities in the department and the University.

II – PUBLICATION(S) DURING YOUR FELLOWSHIP

1. Luy Nguyen Tan, **Nishu Gupta**[*], Mohammad Derawi "Event-Triggered Communication-Based Online Algorithm of Robust Optimal Control for Van der Pol Oscillator Networked Agents" **published** in IEEE Access, pp. 8938-8949, vol. 11. 2023, ISSN: 2169-3536, **IF: 3.367**. doi: https://doi.org/10.1109/ACCESS.2023.3239665.

2. Mohammed Bouzidi, **Nishu Gupta**[*], Faouzi Alaya Cheikh, Andrii Shalaginov, and Mohammad Derawi, "A Novel Architectural Framework on IoT Ecosystem, Security Aspects and Mechanisms: A Comprehensive Survey", **published** in IEEE Access, pp. 101362-101384, vol. 10, 2022, ISSN: 2169-3536, **IF: 3.367**. doi: https://doi.org/10.1109/ACCESS.2022.3207472

3. Mohammed Bouzidi, **Nishu Gupta**[*], Yaser Dalveren, Marshed Mohamed, Faouzi Alaya Cheikh and Mohammad Derawi, "Indoor Propagation Analysis of IQRF Technology for Smart Building Applications" **published** in Electronics, MDPI, vol. 11, issue 13(3972), pp. 1-14, 2022, ISSN: 2079-9292. **IF: 2.690**. doi: https://doi.org/10.3390/electronics11233972

4. **Nishu Gupta**[*], Mohammad Derawi, Mauro Mazzei, "A Scalable and Clustering-Based Routing Approach for Internet of Vehicles" **accepted** for publication in the 12th International Conference on Industrial Technology and Management (ICITM 2022) to be organized at Cambridge, United Kingdom during February 16-18, 2023.

5. Zubair Shaban, **Nishu Gupta**[*], Krishan Kumar, Sandeep Kumar Sarowa, Mohammad Derawi, "Performance Analysis of LBT Cat4 based 5G IoT enabled New Radio in Unlicensed Spectrum" **accepted** for publication in the 4th International Conference on Advances in Distributed Computing and Machine Learning (ICADCML)-2023 to be organized by National Institute of Technology, Rourkela, Odisha, India during Jan 15-16, 2023.

6. Book (edited) by **Nishu Gupta**, Mohammad Derawi, et al., entitled "Human *Machine Interaction and IoT Applications for a Smarter World*" published by CRC Press, Taylor & Francis Group, 2022, eBook **ISBN: 978-1-003-26879-6**, doi: https://doi.org/10.1201/9781003268796

7. Luy Nguyen Tan, **Nishu Gupta**[*], Mohammad Derawi, "Event-Triggered Control for Oscillators under Cyber-Attacks on Sensors and Actuators in Internet of Things Networks" **pending for submission** in IEEE Internet of Things Journal.

8. Pallavi Asthana, Sumita Mishra, **Nishu Gupta**[*] (senior member), Mohammad Derawi, and Anil Kumar, "Prediction of Student's Performance with Learning Coefficients using Regression based Machine Learning Models" **pending for submission** in IEEE Access.

9. Pankaj Khatiwada, **Nishu Gupta**, Bien Yang, Mohammad Derawi, "Adaptive Key Management-based Privacy Preservation Protocol for Healthcare Data **pending for submission.**

III – ATTENDED SEMINARS, WORKSHOPS, CONFERENCES

I attended the 12th International Conference on Industrial Technology and Management (ICITM) held in Cambridge, United Kingdom during February 16-18, 2023.

IV – RESEARCH EXCHANGE PROGRAMME (REP)

I visited IASI, Institute of Systems Analysis and Computer Science, CNR, Italian National Research Council, Rome, Italy as part of the REP, under the supervision of Dr. Mauro Mazzei. Duration of my visit was from 9th October 2022 to 4th November 2022.