Fellow	Faisal Jamil
Host Organisation	Norwegian University of Science and Technology (NTNU)
Scientific coordinator	Prof. Ibrahim A. Hameed

I – SCIENTIFIC ACTIVITY DURING YOUR FELLOWSHIP

During the fellowship, I have worked on various research projects. Following are the list of projects where I contribute during the fellowship.

- Title: Toward Intelligent Open-Ended Question Evaluation based on Predictive Optimization (Finished)
    - Worked on student exam dataset. The main aim of this project is to find the semantic similarity between the reference answers and the student written answer using predictive optimization. A semantic similarity algorithm is developed by using growbag and wordnet library to compute semantic score.
- Title: A Gamified Approach for Optimal Waste Management based on IoT-Blockchain Network using Deep Reinforcement Learning (Finished)
    - Worked on optimal waste tracking and classification project. The main aim of this project is to classify different type of waste using deep learning algorithms. Furthermore, a deep reinforcement learning is applied to compute the optimal route of the waste carrier agent in smart city environment.
- Title: Telepresence System based on 360 virtually reality and Context-Aware Robot with Augmented Reality Navigation for Elderly People (On going)
    - A telepresence system for elderly individuals that utilizes 360° virtual reality and a context-aware robot with augmented reality navigation. By combining these tools and technologies, the system aims to enhance the quality of life for seniors by providing immersive remote communication and personalized physical assistance, addressing social isolation and mobility challenges commonly faced by the elderly population.
- Title: Development of Metaverse for Intelligent Healthcare Based on Decentralized Edge Intelligence Computing Environments (Finished)- Proposal for Brain Pool Korea Fellowship-2023
    - The development of a metaverse for intelligent healthcare utilizing decentralized edge intelligence computing environments. By leveraging cutting-edge technologies, such as edge computing and decentralized networks, the proposed metaverse aims to enhance healthcare services by providing intelligent and personalized solutions. The integration of these technologies has the potential to revolutionize the healthcare industry, offering improved accessibility, efficiency, and patient care within a virtual environment.
- Title: Toward Optimal Controlling of Smart Vehicle Environment based on IoT and Blockchain Network (Completed)
    - Focuses on achieving optimal control of smart vehicle environments by leveraging the Internet of Things (IoT) and blockchain network. The integration of these technologies aims to enhance the efficiency and reliability of smart vehicle systems, enabling intelligent decision-making, data sharing, and secure communication by combining IoT and blockchain.

II – PUBLICATION(S) DURING YOUR FELLOWSHIP

- **Title: Voice recognition Sensing Architecture in Self-Driving Vehicle Vehicular Ad Hoc Network using Hidden Markov Model**
  Status: Accepted in ICES-2023 Conference
  Author: Faisal Jamil, Abid Ali, Meryem Ammi, Ibrahim A. Hameed

- **Title: Toward Intelligent Open-Ended Question Evaluation based on Predictive Optimization**
  Status: Minor Revision in Expert Systems with Applications Journal (Impact Factor: 8.665)
  Author: Faisal Jamil, Ibrahim A. Hameed

- **Title: A Gamified Approach for Optimal Waste Management based on IoT-Blockchain Network using Deep Reinforcement Learning**
  Status: Pending
  Target Journal: Journal of Cleaner Production (Impact Factor: 11.072)
  Author: Faisal Jamil, Saleh Abdel-Afou Alaliyat, Ibrahim A. Hameed

- **Title: Telepresence System based on 360 virtually reality and Context-Aware Robot with Augmented Reality Navigation for Elderly People (On going)**
  Status: Pending
  Target Journal: IEEE Transactions on Robotics (Impact Factor: 6.835)
  Author: Faisal Jamil, Syed Hammad Hussain Shah, Ibrahim A. Hameed

- **Title: Toward Optimal Controlling of Smart Vehicle Environment based on IoT and Blockchain Network**
  Status: Ready for submission
  Target Journal: IEEE Transactions on Intelligent Transportation Systems (Impact Factor: 9.551)
  Author: Faisal Jamil, Saleh Abdel-Afou Alaliyat, Ibrahim A. Hameed

- **Title: Development of Metaverse for Intelligent Healthcare Based on Decentralized Edge Intelligence Computing Environments**
  Status: Draft Version Completed
  Target Journal: Future Generation Computer Systems (Impact Factor: 7.187)
  Author: Faisal Jamil, Syed Hammad Hussain Shah, Saleh Abdel-Afou Alaliyat, Ibrahim A. Hameed

- **Title: A Survey of Covert Attacks on Neural Network Models: Threats, Challenges, and Solutions**
  Status: Pending
  Target Journal: IEEE Internet of Things Journal (Impact Factor: 9.936)
  Author: Ibrahim A. Hameed, Faisal Jamil

III – ATTENDED SEMINARS, WORKHOPS, CONFERENCES

- Name: 36th INTERNATIONAL ECMS CONFERENCE ON MODELLING AND SIMULATION
  Dates:30.05.2022--- 03.06.2022

Event: Conference
Places: NMK, Ålesund, Norway

- Name: The International Conference & Exhibition for Science (ICES2023)
  Dates: 06.02.2023--- 08.03.2023
  Event: Conference
  Place: Virtual Presentation

- Name: Research in Distance Education and e-Learning (RIDE) conference
  Date:27.03.2023-----31-03-2023
  Event: Conference
  Place: University of London, London, United Kingdom

- Name: Machine Learning Forum
  Date: 09.03.2023
  Event: Workshop
  Place: NMK, Ålesund, Norway

IV – RESEARCH EXCHANGE PROGRAMME (REP)

REP Organization Name: The Foundation for Research and Technology - Hellas (FORTH)
Country: Greece
Department: Information Systems Laboratory of the Institute of Computer Science, FORTH
Scientific Coordinator: Prof. Kostas Magoutis (magoutis@ics.forth.gr)
Dates: 19.05.2023--- 25.05.2023
Summary: During my research exchange program, I engaged in a dynamic and collaborative academic environment, working alongside top scholars and researchers) in my field. Involved in "SmartCityBus: A platform for smart transportation systems" and aimed to have a future collaboration with the development of lidar for crowd density in SmartCityBus project. Along with that we also agreed on future collaboration on smart localization module in another smart city project.
Other than research activities I also Explored Santorini's picturesque landscapes and breathtaking sunsets was a truly enchanting experience. From the charming white-washed villages to the stunning volcanic beaches, Santorini captivated me with its unique beauty and left me with unforgettable memories.
This program broadened my perspectives, fostering cross-cultural learning and enabling me to contribute to groundbreaking research projects. Through invaluable networking opportunities, I formed lasting connections with international colleagues, enriching my academic journey and paving the way for future collaborations.

Ibrahim A. Hameed
Name and signature of the *Scientific Coordinator*

Faisal Jamil
Name and signature of the *Fellow*