Akhlaque AHMAD, Ph.D.

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EDUCATION

- **Ph.D. in Electronics and Communication Engineering**

  Politecnico di Torino, Italy, 2014

  Dissertation Title: 3D Graphics Reconstruction, Compression and Animation

- **Masters in Communication Engineering**

  Politecnico di Torino, Italy, 2010

  Dissertation Title: Scalable Video Coding over SEACast

- **Masters in Electronics**

  Quiad.e.Azam University, Islamabad, Pakistan, 2008

- **Bachelor of Science in Computer Science**

  Bahauddin Zakariya University, Multan, Pakistan, 2005

WORK EXPERIENCE

- **Assistant Professor**   **March 2018 - Present**

  Dhanani School of Science and Engineering, Habib University, Karachi, Pakistan

  – Teaching various courses of Computer Science
  – Academic advisor to council student's academic issues
  – Handling administrative tasks

- **Assistant Professor**   **March 2014 - March 2018**

  Department of Computer Science, Iqra University, Islamabad, Pakistan

  – Delivering classes of BS, MS and PhD level courses
  – Supervising theses of BS and MS students
  – Coordinating the MS and PhD programs at Iqra University
  – Handling administrative tasks

- **Researcher**   **March 2014 - Aug 2014**

  Politecnico di Torino, Italy

  – Research and implementation of Remote 3D graphics compression project

- **Ph.D. Researcher**   **Jan 2011 - December 2013**

  STMicroelectronics, Milano, Italy

  – Working on 3D object acquisition and rendering
  – 3D mesh encoding using H.264 graphics coding
  – Motion-data acquisition and transmission over network

- **Internship**   **March 2010 - September 2010**

  STMicroelectronics, Milano, Italy

- Implemented Scalable Video Coding with a P2P multimedia streaming system SEACast
- Testing and validation on Planetlab

PEDAGOGICAL TRAININGS

- Workshop on Designing Student Centered Learning Experiences

  - *Three days extensive workshop from the experience learned at Olin's college USA*

- Pedagogical workshop on Reflective Teaching Practice

  - *Three days extensive workshop by Prof. Glen Van Brummelen, Quest University, Canada*

PUBLICATIONS

- **Evolution-Based Deployment Scheme for Green Internet of Things**

  Aoun Hussain, Faraz Ahmad Khan, Akhlaque Ahmad

  IEEE World Forum on IoT, April 2019, Limerick – Ireland

- **Crumbling Walls Log Quorum System based Name Resolution Routing for CCN based IoT**

  Pir Imran Shah, Peer Azmat Shah, Sadaf Yasmin, Zahoor-ur-Rehman, Akhlaque Ahmad, Yunyoung Nam

  Journal of Universal Computer Science, July 2018 (SCIE Q3, JCR 2017 IF=1.066)

- **Opposition-Based Initialization and a Modified Pattern for Inertia Weight (IW) in PSO**

  Mehr Umer Farooq, Akhlaque Ahmad, and Abdul Hameed

  IEEE International Conference on INnovations in Intelligent SysTems and Applications – INISTA 2017, Gdynia, Poland

- **A Simple, Fast and Near Optimal Approximation Algorithm for Optimization of Un-Weighted Minimum Vertex Cover**

  Muhammad Fayaz, Shakeel Arshad, Umar Zaman, and Akhlaque Ahmad

  14 International Conference on Frontiers of Information Technology, Islamabad, 2016

- **Traffic Pattern Based Adaptive Spectrum Handoff Strategy for Cognitive Radio Networks**

  Irfan Hanif, Muhammad Zeeshan and Dr. Akhlaque Ahmad

  10th International Conference on Next Generation Mobile Applications, Security and Technologies 2016, Cardiff, Wales, United Kingdom

- **An Adaptive Spectrum Handoff Strategy for Cognitive Radio Networks**

  Irfan Hanif and Dr. Akhlaque Ahmad

  12th International Conference on High-capacity Optical Networks and Enabling/Emerging Technologies (HONET) 2015, NUST Islamabad

- **3D Graphics Compression and Rendering Framework**

  Ahmad, A. and Ijaz, U. and Olmo, G. and Quacchio, E. and Anselmo, T. and Alfonso, D.

  Proceedings of the 6th International Conference on Computer Vision / Computer Graphics Collaboration Techniques and Applications, MIRAGE '13, Berlin, Germany

- **Factoring the RSA Key with New Factoring Algorithm IMFFV3**

  Usman, M. and Ahmad, A.

  International Conference on Engineering and Emerging Technologies, 2015, Lahore, Pakistan

THESES PUBLISHED

- **3D Graphics Reconstruction, Compression and Animation**

  Ph.D. Thesis

  Computer graphics are being used in many gaming and medical applications, where the demands are trending towards immersivity of user, in which a player is immersed into a virtual environment. My PhD work is to create a system where a remote user can interact with other users in a virtual environment. The system reconstructs a virtual character of participating user by forming a mesh, which is further encoded, so that to be transmitted over network. Motion of player is captured, which is encoded and transmitted over network to the remote daemon which handles the interaction of all the users.

- **Scalable Video Coding over SEACast**

  Masters Thesis

  Bit-stream scalability for video is a desirable feature for many multimedia applications. Scalable Video Coding (SVC) is one solution to the problems posed by the characteristics of modern video transmission systems. This work is to implement the transmission of SVC layers over a peer-to-peer streaming system SEACast. The performance of system is measured on world wide academic peer-to-peer lab (planetlab), where an SVC coded video is transmitted to few hundred nodes and continuity index and user experience in terms of heterogeneity constraints are measured.

SELECTED THESES SUPERVISED

- **Opposition Based Initialization and Modified Approach for Inertia Weight in PSO**

  By Mehr Umar Farooq, Spring 2016

- **Texton Based Semantic Image Segmentation**

  By Aftab Syed, Spring, 2016

- **Images Based Secret Key Generation Algorithm**

  By Muhammad Sajid, Fall, 2015

- **Efficient Optimized Channel Allocation and Mobility using Particle Swarm Optimization Algorithm in Vehicular Cognitive Radio**

  By Muhammad Mudassar Afzal, Fall 2015

- **New Factorization Algorithm IMFFV3 and Its performance Evaluation**

  By Muhammad Usman, Spring 2015

- **Mean of Neighbors degrees of Minimum degree vertex Algorithm (MNMA) For Minimum Vertex Cover Optimization Problem**

  By Umer Zaman, Spring 2015

PROFESSIONAL ACTIVITES

- Reviewer for Frontier of Information and Technology (FIT) conference.

- Participated in the summer school of "Green Networking" held under the framework of EU project TREND

- Scienctific contribution to international European funded project REVERIE www.reveriefp7.eu

- Served as graduate advisory committee member for a PhD at SEECS, NUST

- Reviewer for NUST Open House 2017

- Served as curriculum revision committee member at Mirpur University of Science and Technology AJK

Awards & Distinctions

- Received a travel grant from Higher Education Commission, Pakistan to present paper in Inista 2017, Gdynia, Poland

- HEC Approved PhD Supervisor

- Awarded Scholarship from STMicroelectronics, Italy during PhD study period

- Awarded HEC UESTP Scholarship for masters leading to PhD studies

References

- **Prof. Gabriella Olmo**

  Professor at DET, Politecnico di Torino, Italy

  olmo@polito.it

- **Emanuele Quacchio**

  System Engineer at STMicroelectronics, Italy

  Emanuele.quacchio@st.com

- **Dr. Tauseef Khawaja Tasneem**

  Assitant Professor at Saudi Electronic University, Saudi Arabia

  tauseef@iqraisb.edu.pk