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1. Title: Deep learning — A key Enabling Technology for Future Development

2. Name and Affiliation:
   Dr. Awais Ahmad, Department of Computer Science, Bahria University, Islamabad, Pakistan.

3. Date, Time and Venue : 2019.04.30. 10:30 ~ , IT5, Room 324

4. Target Audience: KNU Professors, Graduate students

5. Organization, Sponsored by:
   BK21+ SW Human Resource Development Program for Supporting Smart Life

ABSTRACT:

In recent studies Machine Learning is regarded to be one of the disruptive technologies that will transform our future life, business and the global economy. In their 2013 study McKinsey identified 12 technology areas with the potential of a high impact on how people live and work and on industries and economies. In most of these areas Machine Learning is a key enabling technology. Machine Learning is learning from data rather than programming hard coded decision rules. Taking alone this short definition highlights the central role of Machine Learning nowadays. The worldwide process of digitization produces data in all areas as e.g. production processes, Internet of Things, health care and even our daily life. In this presentation, Machine Learning is defined a bit more precise. Going through the development of this rapidly emerging field, the different types of Machine Learning are explained and examples from different application areas are given. It will be shown, that computers are able (or will be able) to solve problems that were supposed to be dependent on human expertise in the past. Among many other benefits, this can be economically advantageous in many areas. This will lead to a broad dissemination of Machine Learning applications. The downside of this development is the fact that the future of our life and in particular of our work life will change dramatically. Some jobs - and in particular those requiring a low level of education and a high level of automation - are likely to disappear and on the other hand new job opportunities will open. Implications on university education will be discussed. This does not apply to computer science programs alone but also to other fields of study.

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BIOGRAPHY:

Dr. Awais Ahmad, MIEEE received his Ph.D. in Computer Science and Engineering from Kyungpook National University, Daegu, Korea. He is currently working as Assistant Professor in the Department of Computer Science, Bahria University, Islamabad Pakistan. He is also working as a Senior Research Scientist at University degli Studi di Milano, Italy. Previously, he was working as an Assistant Professor in the Department of Information and Communication Engineering, Yeungnam University. In 2014, he was also a visiting researcher in INTEL-NTU, National Taiwan University, Taiwan, where he was working on Wukong Project (Smart Home). Since 2013, He has authored and co-authored 160 peer-reviewed publications in International Journals (Cumulative Impact Factor: 150+)/Conferences/Book Chapters in various reputed IEEE Transactions, IEEE Magazines, ACM Transactions, Elsevier, and Springer Journals, whereas in leading conferences, i.e., IEEE INFOCOM, IEEE GLOBCOM, IEEE LCN, and IEEE ICC, respectively. Dr. Awais is also serving as Guest editor in various Elsevier and Springer Journals..

Moreover, Dr. Awais is a member of IEEE and ACM, serving as a TPC member or reviewer in 20+ International Conferences and workshops in including IEEE Globecom, IEEE ICC, IEEE Infocom, ACM SAC, and much more. Furthermore, he is an invited reviewer in various journals, including IEEE Communication Letters, IEEE Transactions on Wireless Communications, IEEE Transactions on Intelligent Transportation System, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Ad-Hoc Networks Elsevier, Computer Network Elsevier, and IEEE Communications Magazine. Dr. Ahmad was the recipient of four prestigious awards: (1) IEEE Best Research Paper Award: International Workshop on Ubiquitous Sensor Systems (UWSS 2015), in conjunction with the Smart World Congress (SWC 2015), Beijing, China, August, (2) Research Award from President of Bahria University Islamabad, Pakistan in 2011, (3) best Paper Nomination Award in WCECS 2011 at UCLA, USA, and (4) best Paper Award in 1st Symposium on CS&E, Moju Resort, South Korea, in 2013. He was also serving as a Lab Admin of CCMP Labs from 2013 to 2017. He was also awarded as Best Outgoing Researcher of CCMP labs. His research interests include Deep Learning, Machine Learning, Artificial Intelligence, Denoising and Demosacking, Big Data Analytics, Sensor and Adhoc Network, and Internet of Things.

CONTACT US

Prof. ANAND PAUL @ KNU, School of Computer Science and Engineering
e-mail : anand@knu.ac.kr