

Smart Cities from the Ground to the Cloud: Technologies and Services

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Governments and City Councils nowadays are deploying smart infrastructure and services that range from health, to education, to transportation, to energy and to building and factories. Citizens engage with smart cities ecosystems in a variety of ways using their smartphone, mobile devices, desktop computing devices as well as connected cars, homes, hospitals and factories.

Smart cities applications are built and developed using enabling technologies start from the physical layers and to the cloud layer. The conceptual model of a smart cities consists of edge sensing computing devices layer, communications and fog computing layer, data analytics and cloud computing platforms layer, and a cyber-security layer that overlap with all layers to provide security and privacy.

The talk will discuss the computing layers and software platforms that enable the smart cities authorities and its citizen to communicate to exchange, process, analysis and visualize data. Also, the talk will present some applications that show how smart cities save governments, businesses and citizens money as well as to make better decisions that improve quality of life.



Biography: A. R. Al-Ali (SM IEEE) received his Ph.D. in electrical engineering and a minor in computer science from Vanderbilt University, Nashville, TN, USA. Master degree from Polytechnic Institute of New York, USA, and B.Sc.EE from Aleppo University, Syria. Professor Al-Ali worked as an associate/assistant professor in KFUPM, Saudi Arabia (1991- 2000), and has been a Professor of Computer Science and Engineering at the American University of Sharjah (UAE) since 2000. His research and teaching interests include; embedded systems hardware and software architectures, smart homes automations, smart grid evolutions and development, smart factories and cities. Professor Al-Ali has many conference and journal publications including two USA and European Patents. He has also been invited to deliver keynote speeches on the recent evolution and development on the Internet of Things, Cyber-Physical Systems, smart grid and smart cities at several local and international conferences:

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A list of Selected Recent Keynote Speaker and Invited Talks:

- Program Chair and Keynote Speaker 2020 The 4th International Conference on Smart Grid and Smart Cities held in Japan Aug., 2020. Talk title: **Smart Cities from the Ground to the Cloud: Technologies and Services.**
- Invited talk UAE Society of Engineering, "Smart Manufacturing Enabling Technologies in Smart City", April 2020 (Webinar: online).
- Program Chair and Keynote Speaker, the 3rd International Conference on Smart Grid and Smart Cities (ICSGSC 2019) and 2nd. International Conference on Energy, Electrical and Power Engineering (CEEPE 2019), held at the University of California, Berkeley, USA during June 25-28, 2019.
- Invited talk: Title: Industry 4.0 Revolution and its Enabling Techniques: IoT, CPS and Digital Twins, SPS Automation Middle East Conference | Messe Frankfurt, Sept 2018, Dubai, UAE
- Keynote: Title of Speech: The Roadmap from Smart Grid to Smart Cities, International Conference on Smart Grid and Smart Cities (ICSGSC 2018), Aug 14-16, Kuala Lumpur, Malaysia.
- Invited Speaker: Role of Innovation in Smart Energy within a Cyber Physical Systems Context, Dubai Innovations, Feb-2018, Dubai, UAE.
- Keynote: Role of cyber physical systems in smart manufacturing, the 2018 2nd International Conference on Manufacturing Technologies (ICMT 2018, Florida Polytechnic University, FL, USA during January 15-17, 2018.
- Keynote: "Smart Energy and Smart City Big Data Analytic", the 2017 International Conference on Smart Grid and Smart Cities, Singapore | July 23-26, 2017.
- Keynote: "The Roadmap from the Internet of Things to Internet of Energy", the International Conference on IT & Computer Science – ICITCS – 2017, Washington DC, USA, Date: 18-19 February 2017.
- Keynote: Internet of Things and Cloud Computing Role in Industry 4.0, the International Conference on IT & Computer Science – ICITCS – 2016 New York, USA Date: 28-29th October, 2016
- Keynote: Smart Energy within the Context of Internet of Things and Cloud Computing, 3rd Int. Conf. on Power and Energy Systems Engineering (CPESE 2016), September 8-12, 2016 | Kyushu Institute of Technology, Kitakyushu, Japan
- Invited talk: Industry 4.0 Enabling Technologies: Industrial Internet of Things and Cloud Computing, Industrial Engineering Dept, American University of Sharjah, UAE, April 2016.
- Keynote: Industry 4.0 Enabling Technologies: Industrial Internet of Things and Cloud Computing, for GCC Siemens solution partners, Dubai, UAE, Feb 2016.
- Keynote Talk: The Role of Internet of Things in the Smart Cities Power, the 17th International Conference on Electrical, Computer, Electronics and Communication Engineering to be held in Dubai, UAE during December 23-24, 2015.
- The Role of Internet of Things in the Smart Grid Technology Evolution", the Smart Grids and Smart Meters Summit - Dubai, UAE, Oct 2015.
- Keynote Speaker: Role of Internet of Things and Cloud Computing in the Smart Grid Technology, Germany, Oct 2015.
- (http://www.icsgce.com/?page=keynote_speakers/).
- Keynote Speaker: The Role of Internet of Things in the Smart Grid Technology Evolution, August 23-25, 2015, Bangkok, Thailand (<http://www.icred.org/kn.php>).
- Keynote Speaker: Role of Internet of Things in the Smart Grid Technology 2015 Conference on Internet of Things and Smart City (Its 2015), May 25, 2015, Beijing, China (<http://www.scirp.org/conf/IoTSC/2015may/>).
- Keynote Speaker: The Role of Internet of Things in the Smart Grid Technology, the M2M Middle East Forum, May 12, 2015, Dubai, UAE.
- Keynote Speaker: Cloud Computing Paradigm as Smart Grid Enabling Technology, 5th International Conference on Computer and Communication Engineering Sept, 2014, Kuala Lumpur, Malaysia.