Keynote Speaker

Prof. Antonio Skarmeta

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Dr. Antonio Skarmeta received the M.S. degree in Computer Science from the University of Granada and B.S. (Hons.) and the Ph.D. degrees in Computer Science from the University of Murcia Spain. Since 2009 he is Full Professor at the same department and University. Antonio F. Skarmeta has worked on different research projects in the national and international area in the networking, security and IoT area, like Euro6IX, ENABLE, DAIDALOS, SWIFT, SEMIRAMIS, SMARTIE, SOCIOTAL and IoT6. His main interested is in the integration of security services, identity, IoT and Smart Cities. He has been head of the research group ANTS since its creation on 1995. Actually he is also advisor to the vice-rector of Research of the University of Murcia for International projects and head of the International Research Project Office. Since 2014 he is Spanish National Representative for the MSCA within H2020. He has published over 200 international papers and being member of several program committees. He has also participated in several standardization for a like IETF, ISO and ETSI.

Keynote Title

Authentication and Authorization mechanism and security bootstrapping in the IoT-enabled 5G Era

This talk will review the basic concepts of securing communications proposal for Internet of Things (IoT) and how the bootstrapping aspect can be applied on 5G networks. The life-cycle of an IoT device will be identified with focus on the process of bootstrapping as one of the initial steps involved in securing the communications. After that, the talk will explore some of the works done by different organizations and alliances such as IETF and 5G among others in the context of the IoT.

Some of the current works in the IETF will be also reviewed since it is the organization that is involved in the development of the Internet, having developed Authentication and Authorization Frameworks for IoT some of the current standards used not only in the Internet but also in IoT.

In the IETF, there are working groups that are dedicated in the area of securing the communications in IoT, and we will review some of their current efforts towards securing the IoT. Then, we will turn our focus on current frameworks for authentication and authorisation that are used or considered in the context of IoT and the requirements to be applicable in 5G networks.
Prof. Jyh-Cheng CHEN, FIEEE

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Prof. Jyh-Cheng Chen has been a Faculty Member with National Chiao Tung University (NCTU), Hsinchu, Taiwan since 2010. Prior to that, he was with Bellcore/Telcordia Technologies in New Jersey, USA, and National Tsing Hua University (NTHU), Hsinchu, Taiwan. He was the Convener of Computer Science Program, Ministry of Science and Technology, Taiwan from 2016-2018. Dr. Chen received numerous awards, including the Outstanding Teaching Awards from both NCTU and NTHU, the Outstanding Research Award from the Ministry of Science and Technology, the Outstanding I. T. Elite Award, Taiwan, the K. T. Li Breakthrough Award from the Institute of Information and Computing Machinery, and the Telcordia CEO Award. He is a Fellow of the IEEE and a Distinguished Member of the ACM. He was a member of the Fellows Evaluation Committee, IEEE Computer Society.

Keynote Title

RECO, SLV and free5GC – a path toward softwarization and virtualization of 5G core networks

It is envisioned in the future that not only smartphones will connect to cellular networks, but also all kinds of different wearable devices, sensors, vehicles, home appliances, VR headsets, and robots. Because the characteristics of these devices differ largely, people argue that future 5G systems should be designed to elastically accommodate different user types. The evolution of core networks will be driven by integrating heterogeneous networking technologies with the ultimate goal of migrating toward a new form of softwarized and programmable network. Network function virtualization will provide flexibility, short time to market, and low-cost solution to build network services, which are important features of 5G networks. In this talk, I’ll first present the evolution of cellular systems from 1st generation (1G) to 4th generation (4G), with a focus on core networks. I’ll then discuss the softwarization and virtualization of 5G core networks. Finally, I’ll present the open-source projects we have been developing for 5G core networks, including Reconfigurable Core (RECO), Service Level Virtualization (SLV), and free5GC.
Keynote Speaker

Prof. Chi-Sheng SHIH

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Dr. Chi-Sheng Shih is a professor at Graduate Institute of Networking and Multimedia (GINM) and Department of Computer Science and Information Engineering at National Taiwan University. He is also currently the Director of GINM and Interim Director of High Performance and Scientific Computing Center, National Taiwan University. He received the B.S. in Engineering Science and M.S. in Computer Science from National Cheng Kung University in 1993 and 1995, respectively. In 2003, he received his Ph.D. in Computer Science from the University of Illinois at Urbana-Champaign. His main research interests include embedded systems, hardware/software codesign, real-time systems, middleware, and cyber-physical systems. His research results won several awards including the Best Paper Award in 2016 IEEE International Symposium on Cloud and Service Computing, 2011 ACM Research in Applied Computation Symposium (RACS 2011), IEEE RTCSA 2005, and IEEE RTSS 2004. He also serves the Associate Editor of IET Cyber-Physical Systems: Theory and Applications and Springer Journal of Services-Oriented Computing and Applications (SOCA).

Keynote Title

From Rail to Railless: Retrofitting Servicing Buses for Safe Autonomous Public Transportation

Automated/autonomous driving technologies have shown the capability of providing transportation services at certain environments such as small/mid size vehicles on highway and paved roads. However, it remains open to build up an active eco-system to support the development of autonomous driving technologies. This talk presents the development of applying automated/autonomous driving technology on public transportation systems, at which efficiency and safety are two major requirements. The project retrofits a 9-meter engine bus to support SAE level 3/4 automated driving for proof-of-services. In particular, a sensing fusion technology is deployed on the bus to detect objects in three dimension world coordinates. With this technology, the system can provide high capacity transportation systems without rails. The bus has been evaluated in a proof-of-service event. During the 32 days event, the bus served for 253 sorties, which is 20% more than scheduled sorties, and carried more than 7,000 passengers. The proof-of-service showed that the automated driving technology can provide railway-like services without the rails.