e-Health Technical Committee NewsLetter

August 2021

On behalf of the e-Health Technical Committee (TC) of the IEEE Communications Society (ComSoc), we wish all our members a very instructive reading of this letter.

The contribution in this edition is coming from: Ayman Radwan and M. Fátima Domingues (aradwan@av.it.pt , fatima.domingues@ua.pt) from Instituto de Telecomunicações and Universidade de Averio, Portugal. The contribution is related to the SAFE-HOME project https://safe-home.care/

Members of the e-Health community are invited to contact the author for further information or collaborations.

We also welcome all our members to share their research activities and field experiences through this open newsletter and to open up new opportunities for discussions and collaborations.

Editor: Dr. Nada Philip (Kingston University London, UK)

Table of Contents

SECURITY-AWARE FOG-BASED EFFICIENT HOME MONITORING FOR ELDERS

Ayman Radwan, M. Fátima Domingues
(aradwan@av.it.pt , fatima.domingues@ua.pt)
Instituto de Telecomunicações and Universidade de Averio, Portugal

SAFE-HOME is a multidisciplinary and international project, between 13 partners, distributed over 4 countries, joining synergies to address a timely and challenging issue, that the world population is facing: the ageing population. It exploits the intersection of a number of disruptive technologies, namely sensor design, artificial intelligence and machine learning algorithms, and recent advances in wireless networking. The project aims at designing a system for monitoring the activity and movement of elders within a confined space (Home), in order to understand their activity level, with ability to identify emergency situations for alerting specific personnel, based on emergency type (e.g. medical staff, ambulance, or emergency contact). SAFE-HOME will also consider users surrounding information (e.g.: neighbourhood and city information) in order to enrich solution results. It is important to note, here, that SAFE-HOME project plans to design a system, which is non-invasive and not dependent on users; hence, for instance, wearables, although can be integrated, will not be used as main components of the system, since they depend on the user always remembering to wear and charge them, at the right times.

SAFE-HOME will work on the intersection of multiple disciplines, towards designing and implementing a non-invasive, security-aware home monitoring for elder citizens. The project will investigate how advanced design

of sensors, intelligent self-optimizing fog-cloud networking, and artificial intelligence can be collaboratively exploited towards providing the envisioned product.

SAFE-HOME is foreseen as to provide the first of its kind solution, to monitor users at the comfort of their home, alerting in case of emergency, without using wearables, cameras, or recording devices.

SAFE-HOME project targets innovation at the following technical endeavours:

- New sensor design techniques, providing high-sensitive, reliable, cost-effective, and compact sensors;
- Design of a sensor network, to detect user's activity within a defined space, based on the shape and area of the monitored space;
- Investigate innovative learning algorithms, which can detect the user's different types of walks, determining different types of activity;
- Provision of reliable delay-dependent security-aware fog and cloud networking;
- An intelligent home-based motion monitoring system for seniors, enabling them to live a fulfilling life, with complete autonomy and independence, reducing the need for full-time home-carers; hence, cutting costs for already over exhausted health systems;

The project is built on the know-how of an international consortium of 13 partners (both industrial and academia) from 4 different countries: Portugal, Poland, Czech Republic, and South Korea.

The project is coordinated by Instituto de Telcomunicações, Aveiro, Portugal.

SAFE-HOME welcomes potential collaboration from outside partners.

Website: https://safe-home.care/
Contact: Ayman Radwan (Project coordinator) – *aradwan@av.it.pt.*

ICC 2022 - Call for Tutorials

SCOPE AND MOTIVATION

IEEE ICC 2022 seeks half-day tutorial proposals to educate ICC attendees on new and emerging topics within the scope of communications & networking. Proposals should be submitted in a PDF file, not exceeding 5 pages, for review via EDAS. The selected tutorials will be held on the first and the last day of the conference (16 May and 20 May). If you have any questions, please contact the Tutorials Co-Chairs: Byonghyo Shim, Rath Vannithamby, and Rui Zhang.

IMPORTANT DATES

Proposal Deadline: 04 October 2021

Notification of Selection: 19 December 2021

For further details please visit this link: https://icc2022.ieee-icc.org/authors/call-tutorial-proposals

ICC 2022 - Call for papers

The 2022 IEEE International Conference on Communications (ICC) will be held in the world famous Gangnam district which is the most vibrant part of the city of Seoul, Korea, from 16 to 20 May 2022. Themed "Intelligent Connectivity for Smart World," this flagship conference of the IEEE Communications Society will feature a comprehensive high-quality technical program including 13 symposia and a variety of tutorials and workshops. IEEE ICC 2022 will also include an attractive industry program aimed at practitioners, with keynotes and panels from prominent research, industry and government leaders, business and industry panels, and technological exhibits.

IMPORTANT DATES:

Paper Submission 11 October 2021

Acceptance Notification 18 January 2022

Camera-Ready 15 February 2022

For further details please visit this link: https://icc2022.ieee-icc.org/authors/call-submissions