Dinesh Tamang

Date of birth: 24/02/1992 | **Nationality:** Nepalese | **Phone number:**

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ABOUT ME

I am a highly motivated and dedicated person, driven by a deep passion for cutting-edge technology research and innovation. With a strong academic background in telecommunications and electronic systems, I am particularly enthusiastic about exploring the dynamic field of 5G New Radio technology and IoT. My primary objective is to leverage my potential through impactful research and collaboration with diverse teams, facilitating the enhancement of my professional skills and fostering continuous career growth.

WORK EXPERIENCE

01/02/2015 – 01/08/2017 Kathmandu , Nepal
MCR ENGINEER ABC MEDIA GROUP PVT. LTD

-Responsible for complete transmission services, troubleshooting in broadcasting and transmission equipment malfunctions
-Setting up studio equipment and switching of live feeds of programs
from studios aired on ABC TV
-Off Air monitoring of all Satellite and IPTV channels.

EDUCATION AND TRAINING

01/11/2020 – 31/12/2023 Pisa, Italy
PHD IN SMART INDUSTRY University of Pisa

Field of study Telecommunication Engineering, Internet of Things, Information and Communication Technologies

04/10/2017 – 27/04/2020 Siena, Italy
MASTERS DEGREE IN ELECTRONICS AND TELECOMMUNICATION ENGINEERING University of Siena

Field of study Information and Communication Technologies (ICTs) not further defined |

Final grade 110 Cum Laude | **Type of credits** ECTS |

Thesis A Zero Latency Handover Scheme for Autonomous Tram Signaling in a 5G Scenario

LANGUAGE SKILLS

Mother tongue(s): **NEPALESE**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2
ITALIAN	A2	A2	A2	A2	A2

DIGITAL SKILLS

programming: Python, MATLAB and SQL │ Competent with Windows 7,10 as well as Ubuntu Linux systems; │ Microsoft Excel │ Programming in C and C++

ADDITIONAL INFORMATION

PUBLICATIONS

Architecting 5G RAN slicing for location-aware vehicle to infrastructure communications: The Autonomous Tram use case.
– 2021

Designing a Reliable and Low-Latency LoRaWAN Solution for Environmental Monitoring in Factories at Major Accident Risk.
– 2022

A Hazardous Area Personal Monitoring System for Operators in Gas Depots and Storage Tanks – 2022

On Safety Enhancement in IIoT Scenarios through Heterogeneous Localization Techniques – 2022

Fast Transmission of Massive Concurrent Alarm Messages in LoRaWAN – 2023
In the context of the Factories at Major Accident Risk (FMAR), we consider a scenario consisting of multiple sensor nodes that detect dangerous conditions and raise alarms over a LoRaWAN network. Upon event detection, a large number of nodes try to transmit concurrent alarm messages and the reception of at least one message is sufficient for the central server to react. We propose a scheme in which nodes operate in a slotted-time mode after the detection of the triggering event and they can only transmit one packet in a randomly chosen slot. The choice of the transmission slot follows a specific probability distribution that maximizes the probability of successful reception of at least one packet subject to real-time latency constraints. We provide an optimization framework to find the optimal distribution for choosing a transmission slot. We validate the proposed scheme by simulations and provide numerical results to compare the performance for three different slot choice distributions: i) uniform, ii) the distribution used in the Sift protocol, and iii) the proposed optimal distribution. The results show that the proposed optimal distribution leads to much better probability of successful packet delivery than other distributions.

Dinesh Tamang, Martin Heusse, Andrea Abrardo, Andrzej Duda

CONFERENCES AND SEMINARS

29/10/2023 – 02/11/2023 – Montreal, Canada
International ACM Conference on Modeling Analysis and Simulation of Wireless and Mobile Systems (MSWiM '23 Paper Presentation entitled, " Fast Transmission of Massive Concurrent Alarm Messages in LoRaWAN"

01/05/2023 – 31/07/2023 – Florence
3-Months Company Internship: Collaboration on Sound Source Localization and Sensor Testing for Gas Leakage Detection Public safety is very important in industrial environments, especially in high-risk fields such as oil and gas, the chemical industry, or nuclear reactor plants where any event or accident can lead to catastrophic consequences both for humans, i.e., the workers and/or those who are living in the surrounding areas, and for the environment. These kinds of scenarios are typically categorized as Factories at Major Accident Risk (FMAR). Localization plays an important role in safety and predictive maintenance where the technology can be used to monitor the location of the gas leakage and prevent potentially dangerous situations. In this regard, acoustic localization using sound waves to locate the position of the source is one of the key methods that can be adopted which determines the location of a sound source in space by measuring the time difference of arrival (TDOA) of the sound at multiple receivers. The main objective of this internship is to explore the use of existing algorithms and TDOA localization techniques using the audio signals collected from the linear array of microphones (planar array may allow us to localize in 3D space). We perform our test in 2D and 3D simulated systems with both linear and planar, or mixed setup.

HOBBIES AND INTERESTS

Reading books, listening music and playing soccer