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Curriculum vitae

PERSONAL INFORMATION

Oltjon Kodheli

Via Antoniotto Usodimare, 1, 40131 Bologna (Italy)

+39 3499428189 +39 3499428189

oltjonkodheli@gmail.com

Gender Male | Date of birth 14 September 1991

Nationality Albanian

EDUCATION

Sep 2014 - Oct 2016

Master of Science in Electronic Engineering

EQF level 7

Alma Mater Studiorum - Università di Bologna, Bologna (Italy)

Final Grade: 110/110 with honours (max score in Italian University System)

Note: International program fully-taught in English

Oct 2010 - Oct 2013

Bachelor of Science in Electronic Engineering

EQF level 6

Polytechnic University of Tirana, Tirana (Albania) - Final Grade: 9/10

Final Grade: 9/10

2006 - 2010

High School - Scientific Direction

"Janaq Kilica" High School Diploma, Fier (Albania)

Average Grade: 9.88/10

SCHOLARSHIP AND AWARDS

March 2017	Scholarship for Post-Master Research awarded from DEI - Alma Mater Studiorum Università di Bologna
October 2016	"Cum Laude" Honour - University of Bologna, Msc in Electronic Engineering
September 2014 - July 2016	JoinEUSEE Penta Erasmus Mundus Scholarship - EU scholarship during Master Studies based on academic records
June 2013	Certificate: Third Place Winner of Start-up Weekend Event, Tirane (Albania)
March 2010	Certificate: Second Place Winner of Fier Olympiad of Physics - competition between best high school students of Fier (Albania)
2008 - 2009 - 2010	Certificate: First Place Winner of "Janaq Kilica" High School Olympiad of Mathematics

RESEARCH EXPERIENCE

1 March 2017 - ongoing

Research Assistant - University of Bologna

Digicomm Research Group

Department of Electrical, Electronic and Information Engineering "Guglielmo Marconi", Bologna (Italy)

Topic: Study and evaluation of the 5G Radio Access Network

Supervisor: Prof. Alessandro Vanelli Coralli

Project Description: The activity is focused on the study, design, and assessment of innovative communication techniques for the next generation 5G wireless systems. Target applications include, but are not necessarily limited to, satellite systems for broadband communications, mobile services, machine to machine applications, ultra reliable and low latency services. Design, analysis, and performance assessment in different scenarios will be based on both theoretical and numerical simulation approaches.

15 March 2016 – 7 October 2016

Master Thesis Research Work

Department of Electrical, Electronic and Information Engineering "Guglielmo Marconi", Bologna (Italy)

Topic: OFDM-based Schemes for Next Generation Wireless Systems

Supervisor: Prof. Alessandro Vanelli Coralli, **CO-Supervisor**: Ing. Alessandro Guidotti

Project Description: Research is focused on candidate waveforms for 5G mobile communication (f-OFDM, UFMC) and the evaluation is done by performing Matlab simulations. You can find more details in Publication section

OTHER PROJECTS

During Master Studies

Activity Recognition by using accelerometer sensor

The recognition of physical activities for purpose of statistics about daily training or health are difficult to address, normally because it requires a full monitoring of the person/patient during the test time. This project removes this problem by using a microcontroller device instead, that recognizes the activity and store the information for a latter processing. Detectable Activities: running, standing, sitting, walking, lying. Used Devices: PIC 16f873A, NXP LCP54100. Programme language used: C++, Java

June 2013

Start-Up Project

Project started on Start-Up weekend Tirana (Albania) event, being part of "Lost in Translation" group. The project consist in building a web-page that connects interpreters with people who need to translate documents in different languages. Users can select the interpreter they want based on his previous work, CV etc, upload their documents, pay using one of the payment services online and wait until it is translated. Project lasted for 6 months and ended due to lack of funds.

PROFESSIONAL EXPERIENCE

15 March 2014 – 31 August 2014

Technical Support for Fastweb Italia

Company Name and address: Fibra Technology, Komuna e Parisit, 1001 Tirana (Albania)

Responsabilities: Team leader (around 24 employees), maintaining internet and telephony network of Fastweb, helping the technicians work by using different network monitoring softwares.

14 Oct 2013 – 14 Dec 2013

Internship at AlbTelecom Sh.A, Tirana (Albania)

– Multi Service Access Node (MSAN) monitoring

PERSONAL SKILLS

Mother tongue: Albanian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English (TOEFL iBT Cert)	C1	C2	C1	C1	C1
Italian (Resident for 3 years)	C1	B2	B2	B2	B2
French (Studied in high school)	A2	A2	A1	A1	A1

Programming skills: Matlab (research work), C/C++ (university projects), Java (online course from Duke University)

Other skills: Enjoy all sports particularly football and running. Love to travel and experience different cultures.

PUBLICATIONS

Master Thesis

1. O.Kodheli, "OFDM-based Schemes for Next Generation Wireless Systems", UNIBO 2016, Bologna, Italy

Abstract: The purpose of this study is to investigate two candidate waveforms for next generation wireless systems, filtered Orthogonal Frequency Division Multiplexing (f-OFDM) and Unified Filtered Multi-Carrier (UFMC). The evaluation is done based on the power spectral density analysis of the signal and performance measurements in synchronous and asynchronous transmission. In f-OFDM we implement a soft truncated filter with length 1/3 of OFDM symbol. In UFMC we use the Dolph-Chebyshev filter, limited to the length of zero padding (ZP). The simulation results demonstrates that both waveforms have a better spectral behaviour compared with conventional OFDM. However, the induced inter-symbol interference (ISI) caused by the filter in f-OFDM, and the inter-carrier interference (ICI) induced in UFMC due to cyclic prefix (CP) reduction , should be kept under control. In addition, in a synchronous transmission case with ideal parameters, f-OFDM and UFMC appear to have similar performance with OFDM. When carrier frequency offset (CFO) is imposed in the transmission, UFMC outperforms OFDM and f-OFDM.

status published

link http://amslaurea.unibo.it/11790/

Conferences

2. O. Kodheli, A. Guidotti, A. V. Coralli, "Integration of Satellites in 5G through LEO Constellations", IEEE GLOBECOM 2017 4-8 December 2017, Singapore

Abstract: The standardization of 5G systems is entering in its critical phase, with 3GPP that will publish the PHY standard by June 2017. In order to meet the demanding 5G requirements both in terms of large throughput and global connectivity, Satellite Communications provide a valuable resource to extend and complement terrestrial networks. In this context, we consider a heterogeneous architecture in which a LEO mega-constellation satellite system provides backhaul connectivity to terrestrial 5G Relay Nodes, which create an on-ground 5G network. Since large delays and Doppler shifts related to satellite channels pose severe challenges to terrestrial-based systems, in this paper we assess their impact on the future 5G PHY and MAC layer procedures. In addition, solutions are proposed for Random Access, waveform numerology, and HARQ procedures.

status under review - paper submitted

REFERENCES

1. Alessandro Vanelli Coralli - Associate Professor

Coordinator of PhD Programme of Electronics, Telecommunications and Information Technologies

Department of Electrical, Electronic, and Information Engineering "Guglielmo Marconi" Academic discipline: ING-INF/03 Telecommunications
E-mail: alessandro.vanelli@unibo.it
Tel: +39 051 20 9 3063
Web: www.unibo.it/sitoweb/alessandro.vanelli/en

relation Supervisor of my work as Research Assistant, Master thesis supervisor as well

2. Cecilia Metra - Professor

Director of Second cycle degree in Electronic Engineering

Department of Electrical, Electronic, and Information Engineering "Guglielmo Marconi" Academic discipline: ING-INF/03 Telecommunications
E-mail: cecilia.metra@unibo.it
Tel: +39 051 20 9 3013 – Fax: +39 051 20 9 3073
Web: www.unibo.it/sitoweb/cecilia.metra/en

relation Teacher - student relationship