

## Curriculum vitae



<b>Informații personale</b>	
Nume / Prenume	Simona Viorica HALUNGA
E-mail(uri)	<a href="mailto:simona.halunga@upb.ro">simona.halunga@upb.ro</a> , <a href="mailto:simona_halunga@yahoo.com">simona_halunga@yahoo.com</a>
Naționalitate(-tăți)	româna
<b>Locul nașterii (loc, județ)</b>	Bucuresti, sector 3
Stare civilă	căsătorită
<b>Experiența profesională</b> <i>(în ordine invers cronologică)</i>	
<b>Perioada</b>	<b>1991-1997 / 1997-2001/2001-2005/ 2005-2010 / 2010-prezent</b>
Funcția sau postul ocupat	<b>Asistent / Șef lucrări / Conferențiar/ Profesor / Profesor conducător de doctorat</b>
Activități și responsabilități principale	<b>Activitati:</b> Cursuri, aplicatii si laboratoare la disciplinele: <ul style="list-style-type: none"><li>• Semnale și Sisteme</li><li>• Analiza și Sinteza circuitelor</li><li>• Comunicații analogice / Comunicații de date</li><li>• Comunicații prin satelit</li><li>• Securitatea rețelelor de calculatoare</li><li>• Securitatea sistemelor de comunicații</li><li>• Signal and Systems (facultatea de Inginerie in limbi străine – ILS)</li><li>• Multiple Access Systems &amp; Techniques (facultatea de Inginerie in limbi străine – ILS)</li></ul>
Numele și adresa angajatorului	Universitatea „Politehnica” Bucuresti, Facultatea de Electronica, Telecomunicatii si Tehnologia Informatiei, Bd. Iuliu Maniu 1-3, 061071, Bucharest 6, Romania, <a href="http://www.electronica.pub.ro">www.electronica.pub.ro</a>
Tipul activității sau sectorul de activitate	Învățământ superior
<b>Perioada</b>	<b>Sept 2007- prezent</b>
Funcția sau postul ocupat	Professor (part time)
Activități și responsabilități principale	Curs si aplicații la disciplinele <ul style="list-style-type: none"><li>• Comunicatii Analogice si Digitale;</li><li>• Tehnici de Acces Multiplu</li></ul>
Numele și adresa angajatorului	Universitatea Maritima din Constanta Bd. Mircea cel Batran nr. 104, 900663
Tipul activității sau sectorul de activitate	Învățământ superior
<b>Perioada</b>	<b>1997-1999</b>
Funcția sau postul ocupat	<b>Profesor Invitat</b>

Activități și responsabilități principale	Cursuri si aplicatii la disciplinele: <ul style="list-style-type: none"> <li>• Communications System I (princiipiile sistemelor de comunicatii);</li> <li>• Communications System II (Sisteme de comunicatie digitale);</li> <li>• Engineering Probabilities and Statistics;</li> <li>• Analysis of Random Signals</li> </ul>
Numele și adresa angajatorului	University of Colorado at Colorado Springs, 1420 Austin Bluffs Pkwy, Colorado Springs, CO USA 80918
Tipul activității sau sectorul de activitate	Învățământ superior
<b>Perioada</b>	<b>1987-1991</b>
Funcția sau postul ocupat	<b>Inginer de proiectare / dezvoltare</b>
Activități și responsabilități principale	Dezvoltarea și testarea unității de virgulă flotanta pentru calculatorul CORAL 8730
Numele și adresa angajatorului	Fabrica de calculatoare "Felix",Bucuresti, Romania Str. Ing. George CONSTANTINESCU 2-4, Bucuresti, sector 2, Romania
Tipul activității sau sectorul de activitate	<b>Inginer de proiectare / dezvoltare</b>
	<b>Se adaugă linii suplimentare dacă este cazul</b>
<b>Educație și formare</b>	<b><i>în ordine invers cronologică, se vor trece și cele mai importante studii post-universitare, post-doctorale, Burse studii, Stagii lucru</i></b>
<b>Perioada</b>	<b>Februarie-Martie 2008</b>
Calificarea / diploma obținută	Certificat de competente profesionale management de proiect
Disciplinele principale studiate / competențe profesionale dobândite	Managementul proiectelor
Numele și tipul instituției de învățământ / furnizorului de formare	Consiliul Național de Atestare a Standardelor Educaționale pentru Administratia Publica (COSA)
<b>Perioada</b>	<b>1996-1997</b>
Calificarea / diploma obținută	Cursuri postuniversitare de Management si Marketing
Disciplinele principale studiate / competențe profesionale dobândite	Management (Modul I) and Marketing (Modul II)
Numele și tipul instituției de învățământ / furnizorului de formare	Camera de Comert si Industrie din Romania si Universitate „Politehnica” Bucuresti în colaborare cu Technische Hochschule Darmstadt, Germania
<b>Perioada</b>	<b>1992-1996</b>
Calificarea / diploma obținută	Doctor Electronică și Telecomunicații Specializarea în radiotehnică și radiocomunicații
Disciplinele principale studiate / competențe profesionale dobândite	titlul tezei de doctorat „Sincronizarea codurilor pseudoaleatoare pentru receptoarele folosite in Sistemele cu Spectru Imprastiat”, coordonator prof. Dr. Ing. Ioan CONSTANTIN
Numele și tipul instituției de învățământ / furnizorului de formare	Universitatea „Politehnica” Bucuresti, Facultatea de Electronica, Telecomunicatii si Tehnologia Informatiei,
<b>Perioada</b>	<b>Februarie – august 1993</b>
Calificarea / diploma obținută	Stagiu doctoral
Disciplinele principale studiate / competențe profesionale dobândite	Studiu și documentare în vederea realizării lucrării de doctorat
Numele și tipul instituției de învățământ / furnizorului de formare	Technische Hochschule Darmstadt Haardtring 100 64295 Darmstadt, Germany

<b>Perioada</b>	<b>1983-1988</b>
Calificarea / diploma obținută	<b>Inginer in Electronica si Telecomunicatii</b>
Disciplinele principale studiate / competențe profesionale dobândite	Capacitatea de sisteme și a analiza, dezvolta și integra sisteme și circuite electronice în vederea realizării unui ansamblu cu funcții și performanțe prestabilite.
Numele și tipul instituției de învățământ / furnizorului de formare	Universitatea „Politehnica” Bucuresti, Facultatea de Electronica, Telecomunicatii si Tehnologia Informatiei,
<b>Membru al unei Academii din România</b>	Se vor preciza: numele Academiei, calitatea de membru și anul din care este membru N/A
<b>Membru al unei Academii din străinătate</b>	Se vor preciza: numele Academiei, țara, orașul, calitatea de membru și anul din care este membru N/A
<b>Membru al unor organizații științifice sau profesionale</b>	Se vor preciza: numele organizației științifice, țara, orașul, calitatea de membru și anul din care este membru Membru IEEE (1996) No.90111885 Membru AGIR (2010)
<b>Membru în Comitetul științific de organizare a unei manifestări științifice</b>	Se vor preciza: perioada, tipul manifestării, instituții organizatoare, unde a avut loc [țara, oraș] – eventual dacă a fost și conducătorul manifestării [principalul organizator] <ul style="list-style-type: none"> <li>• organizator și chair Special Session “Industrial and AI-based applications and secure systems and communications in the era of Future Networks and beyond” ECAI-2023: 15th Edition of International Conference on Electronics, Computers and Artificial Intelligence, Politehnica University of Bucharest, Bucharest, Romania, June 29-30, 2023</li> <li>• TECHNICAL PROGRAM CO-CHAIR- IEEE International Black Sea Conference on Communications and Networkingm24–28 May 2021</li> <li>• Organizator si chair sesiune speciala Security Constrains and Spectrum Vulnerabilities at the Beginning of 5G Era III - Black Sea Comm 2021</li> <li>• Organizator si chair al sesiunii speciale "Computer-based Algorithms and Systems for Efficiency and Optimization in RF Spectrum Detection and Estimation" ECBS 2019 (6th European Conference on the Engineering of Computer Based Systems) Bucuresti 2-3 sept 2019</li> <li>• Organizator al sesiunii speciale "Propagation, reliability and security issues in wireless and optical communications", ATOM-N, Constanta, 2020 și 2022</li> <li>• Organizator si chair al sesiunii speciale</li> <li>• 2010 – organizator - Special Session “Key Issues in Optimal Communications” – 2010 – 8th International Conference on Communications, Bucharest, Romania, 10-12 June 2010;</li> <li>• organizer of the special session “Synergy versus Convergence in the Wireless and Hybrid Mobile Broadband Communications beyond 3G” in IEEE- EUROCON 2005 Conference, Belgrade, Serbia and Macedonia;</li> <li>• Membru al comitetului de organizare (publicatii si publicitate) ICT-2001 Bucuresti, Romania, 2001;</li> </ul>
<b>Membru in Colegiul de redacție / referent al unei reviste</b>	Se vor preciza: titlul revistei, editura, ISSN, factor de impact al revistei, frecvența de apariție – eventual dacă conduceți chiar dvs. revista <ul style="list-style-type: none"> <li>• Editor asociat - special number Symmetry and Assymetry in Communications Engineering I (2022-2023) and II (2023-2024)- Symmetry MDPI (ISSN: 2073-8994)</li> <li>• Editor asociat - special number Special Issue "State-of-the-Art Sensors Technology in Romania 2021" (2021-2022) and "State-of-the-Art Sensors Technology in Romania 2022" (2022-2023) - Sensors MDPI (ISSN 1424-8220)</li> <li>• Editor asociat – special issue on Trends and Prospects for Wireless Sensor Networks and IoT, 2023-2024, (ISSN 2076-3417)</li> <li>• dec. 2005 – dec 2006– editor asociat IEEE Global Communication Newsletter (GCN);</li> </ul>
<b>PREMII NATIONALE</b>	Se vor preciza: titlul premiului, instituția care vi l-a acordat și anul premierii Premiul George Cartianu al Academiei Romane, 16 decembrie 2010.....

<b>Aptitudini și competențe personale</b>	<ul style="list-style-type: none"> <li>capacitatea de a coordona și îndruma studenții în activitatea de doctorat</li> <li>capacitatea de a lucra cu studentii de la licență / master într-un mod interactiv</li> <li>capacitatea de a scrie cărți, articole și a face prezentări</li> <li>capacitatea de a prezenta un curs, imbinand teoria cu aplicatiile</li> <li>capacitatea de a scrie o carte / prezentare / propunere de proiect pomind de la un set de cerinte date</li> <li>capacitatea de a evalua cunostintele unui interlocutor</li> <li>capacitatea de a dezvolta o lucrare de laborator si de a scrie platforme / indrumar de laborator</li> <li>capacitatea de a exemplifica plin aplicatii notiuni teoretice abstracte</li> </ul>									
<b>Limba(i) maternă(e)</b>	Română									
<b>Limba(i) străină(e) cunoscută(e)</b>										
Autoevaluare	<b>Înțelegere</b>				<b>Vorbire</b>				<b>Scriere</b>	
<i>Nivel european (*)</i>	Ascultare		Citire		Participare la conversație		Discurs oral		Exprimare scrisă	
<b>Limba engleză</b>	<b>C2</b>	UTILIZATOR EXPERIMENTAT	<b>C2</b>	UTILIZATOR EXPERIMENTAT	<b>C2</b>	UTILIZATOR EXPERIMENTAT	<b>C2</b>	UTILIZATOR EXPERIMENTAT	<b>C2</b>	UTILIZATOR EXPERIMENTAT
<b>Limba franceză</b>	<b>B2</b>	UTILIZATOR INDEPENDENT	<b>B2</b>	UTILIZATOR INDEPENDENT	<b>B2</b>	UTILIZATOR INDEPENDENT	<b>B2</b>	UTILIZATOR INDEPENDENT	<b>B2</b>	UTILIZATOR INDEPENDENT
	(*) Nivelul Cadrului European Comun de Referință Pentru Limbi Străine									
<b>Competențe și abilități sociale</b>	<ul style="list-style-type: none"> <li>Capacitati de comunicare;</li> <li>Capacitatea de a lucra in echipa</li> <li>Competente de management de proiect</li> <li>Capacitatea de a lucra într-un mediu multicultural</li> </ul>									
<b>Competențe și aptitudini organizatorice</b>	<ul style="list-style-type: none"> <li>Capacitatea de a coordona o echipa de proiect</li> <li>Capacitatea de a coordona o secție de master (master Telecomunicații, din 2010)</li> </ul>									
<b>Competențe și aptitudini de utilizare a calculatorului</b>	<ul style="list-style-type: none"> <li>Matlab / Simulink / Qualnet simulations; basic C;</li> <li>MS Office, OpenOffice, Visio, Latex,</li> </ul>									
<b>Competențe și aptitudini artistice</b>	<ul style="list-style-type: none"> <li>Muzica, desen, patinaj, înot</li> </ul>									
<b>Alte competențe</b>	<ul style="list-style-type: none"> <li>evaluator si membru evaluator in Bulgarian National Science Fund din 2018</li> <li>evaluator UEFISCDI din 2015</li> <li>evaluator CNCSIS – din 2013</li> <li>evaluator ARACIS – din 2010</li> <li>evaluator FP7 – FP7 Strep Projects – Call 4 (ICT 2009.1.1 The Network of the Future) 25-29 May 2009, Bruxelles.</li> <li>aprilie 2009- prezent -presedinte al Comisiei Tehnice de Evaluare a comitetului Tehnic pentru Standardul CEN 331 – Asociatia Romana de Standardizare,</li> <li>mai 2004 – prezent – expert evaluator pentru Consiliul National de Cercetare Stiintifica, in domeniul sistemelor de comunicatie analogice si digitale, transmisiuni de date, comunicatii mobile / wireless, retele mobile si procesarea semnalelor pentru telecomunicatii.</li> </ul>									
<b>Permis(e) de conducere</b>	<ul style="list-style-type: none"> <li>permis categoria B din 1996</li> </ul>									

<p><b>Informații suplimentare</b></p>	<ul style="list-style-type: none"> <li>• Coordonator stiintific a 3 proiecte internationale și 8 proiecte nationale: <ul style="list-style-type: none"> <li>o 2022-2027, she is leading the Romanian team of MOTOR5G H2020 MSCA-ETN (2019-2025) project and ICARUS (2023-2027).</li> <li>o 2019-2022- MOTOR5G - Proiect MSCA-ITN-ETN nr. 861219/2019 (MObility and Training fOR beyond 5G ecosystems)</li> <li>o 2007-2009-REDICT—Regional Economic Development by ICT/New media clusters (project No. 206480), FP7-REGIONS-2007-1, Coordination and support action programme, 17 parteneri din Nederland, Denmark, Germany, France, Republic of Ireland, Romania</li> <li>o „Mobilitate și Training pentru și dincolo de ecosistemele 5G (MOTOR-5G_Ro)”, contract (grant) nr. 69/2022, proiect de cercetare in parteneriat finantat de UEFISCDI prin PN3, coordonator și unic partener Universitatea POLITEHNICA din București (UPB), Director de proiect Prof. S. Halunga, durata 33 luni (2022-2024), buget UPB și total 160480 lei.2017-2019-Fract OFDM - „Sistem OFDM bazat pe utilizarea FFT cu argument neintreg (FractOFDM)” - contract PN3 tip "PED" nr. 213PED/2017, responsabil de proiect</li> <li>o 2012-2017 – SARAT (Scalable Radio Transceiver for Instrumental Wireless Sensor Networks) contract UPB-CNCSIS tip "Parteneriat" nr. 20/2012</li> <li>o Simona HALUNGA 2012-2016“S Halunga (coord, UPB). Scalable Radio Transceiver for Instrumental Wireless Sensor Networks" (SaRaT-IWSN) - contract tip "Parteneriat" nr. 20/2012 UEFISCDI</li> <li>o 2009-2011 “Contribuții la dezvoltarea algoritmilor de prelucrare si codare a semnalelor video in sisteme multiutilizator prin optimizarea parametrilor de calitate psihoperceptuala” contact UPB-CNCSIS, cod CNCSIS 1695/2009</li> <li>o 2005-2008- SIUM – Sistem Integrat pentru utilizatorul mobil– contract de cercetare tip parteneriat No80/03.10.2005 . Institutul National de Cercetare in Informatica (ICI). Academia de stiinte Econmice (ASE), Universitatea din Pitesti (UPIT);</li> <li>o 2004-2007 – “ Tehnici optimale și cvasioptimale de codare și prelucrare a datelor pentru sistemele de generații a 3a și a 4a” –contract de cercetare UPB- ANSTI No1389/2004, Theme 33;</li> <li>o 2001-2003 “ Metode algoritmice de îmbunătățire a performanțelor receptoarelor la sistemele DS-CDMA / UMTS”, contract de cercetare UPB- ANSTI No; 7072/2001, tema B12, No 33784/23.07.2002, tema 141,</li> <li>o 1999-2002- “ Dezvoltarea și implementarea algoritmilor de prelucrare numerică neliniară a semnalelor video” contract de cercetare UPB- ANSTI No14-20-09</li> </ul> </li> </ul>
<p style="text-align: right;"><b>Anexe</b> (v. Anexa 4 de la pagina 9, de mai jos)</p>	<p><b>LISTA DE LUCRĂRI ȘTIINȚIFICE</b></p> <p>Membri / Expert / Responsabil / Director - ÎN ECHIPA DE CERCETARE în cadrul unor proiecte de cercetare</p>

## Lista primelor 100 de lucrări din pagina Google Scholar, în ordinea descrescătoare a citărilor.

1. Suciu G, Vulpe A, **Halunga S**, Fratu O, Todoran G, Suciu V. Smart cities built on resilient cloud computing and secure internet of things. In2013 19th international conference on control systems and computer science 2013 May 29 (pp. 513-518). IEEE. (312 citări)
2. Suciu G, Suciu V, Martian A, Craciunescu R, Vulpe A, Marcu I, **Halunga S**, Fratu O. Big data, internet of things and cloud convergence-an architecture for secure e-health applications. Journal of medical systems. 2015 Nov;39:1-8. (210 citări)
3. Stancu AL, **Halunga S**, Vulpe A, Suciu G, Fratu O, Popovici EC. A comparison between several software defined networking controllers. In2015 12th international conference on telecommunication in modern satellite, cable and broadcasting services (TELSIKS) 2015 Oct 14 (pp. 223-226). IEEE. (110 c citări)
4. **Halunga SV**, Vizireanu N. Performance evaluation for conventional and MMSE multiuser detection algorithms in imperfect reception conditions. Digital Signal Processing. 2010 Jan 1;20(1):166-78. (86 citări)
5. Udrea RM, Vizireanu N, Ciochina S, **Halunga S**. Nonlinear spectral subtraction method for colored noise reduction using multi-band Bark scale. Signal Processing. 2008 May 1;88(5):1299-303. (85 citări)
6. Craciunescu R, Mihovska A, Mihaylov M, Kyriazakos S, Prasad R, **Halunga S**. Implementation of Fog computing for reliable E-health applications. In2015 49th Asilomar conference on signals, systems and computers 2015 Nov 8 (pp. 459-463). IEEE. (83)
7. Halunga SV, Vizireanu N, Fratu O. Imperfect cross-correlation and amplitude balance effects on conventional multiuser decoder with turbo encoding. Digital Signal Processing. 2010 Jan 1;20(1):191-200. (74 citări)
8. Fratu O, Pena C, Craciunescu R, **Halunga S**. Fog computing system for monitoring Mild Dementia and COPD patients-Romanian case study. In2015 12th international conference on telecommunication in modern satellite, cable and broadcasting services (TELSIKS) 2015 Oct 14 (pp. 123-128). IEEE.(70 citări)
9. Vizireanu DN, **Halunga SV**. Simple, fast and accurate eight points amplitude estimation method of sinusoidal signals for DSP based instrumentation. Journal of Instrumentation. 2012 Apr 2;7(04):P04001. (63 citări)
10. Vizireanu DN, **Halunga SV**. Analytical formula for three points sinusoidal signals amplitude estimation errors. International Journal of Electronics. 2012 Jan 1;99(1):149-51. (62 citări)
11. Vizireanu DN, **Halunga SV**. Single sine wave parameters estimation method based on four equally spaced samples. International Journal of Electronics. 2011 Jul 1;98(7):941-8. (60 citări)
12. Suciu G, Vulpe A, Martian A, **Halunga S**, Vizireanu DN. Big data processing for renewable energy telemetry using a decentralized cloud M2M system. Wireless Personal Communications. 2016 Apr;87:1113-28. (36 citări)
13. Suciu G, **Halunga S**, Vulpe A, Suciu V. Generic platform for IoT and cloud computing interoperability study. InInternational Symposium on Signals, Circuits and Systems ISSCS2013 2013 Jul 11 (pp. 1-4). IEEE. (35 citări)
14. Suciu G, Fratu O, **Halunga S**, Cernat CG, Poenaru V, Suciu V. Cloud consulting: ERP and communication application integration in open source cloud systems. In2011 19thTelecommunications Forum (TELFOR) Proceedings of Papers 2011 Nov 22 (pp. 578-581). IEEE. (33 citări)
15. Butca CG, Suciu G, Ochian A, Fratu O, **Halunga S**. Wearable sensors and cloud platform for monitoring environmental parameters in e-health applications. In2014 11th international symposium on electronics and telecommunications (ISETC) 2014 Nov 14 (pp. 1-4). IEEE.(31 citări)

16. Suciu G, **Halunga S**, Apostu A, Vulpe A, Todoran G. Cloud computing as evolution of distributed computing-A case study for SlapOS distributed cloud computing platform. *Informatica Economica*. 2013 Oct 1;17(4 citări ):109. (29 citări)
17. Fratu O, Martian A, Craciunescu R, Vulpe A, **Halunga S**, Zaharis Z, Lazaridis P, Kasampalis S. Comparative study of Radio Mobile and ICS Telecom propagation prediction models for DVB-T. In2015 IEEE International Symposium on Broadband Multimedia Systems and Broadcasting 2015 Jun 17 (pp. 1-6). IEEE. (28 citări)
18. Arseni SC, **Halunga S**, Fratu O, Vulpe A, Suciu G. Analysis of the security solutions implemented in current Internet of Things platforms. In2015 Conference Grid, Cloud & High Performance Computing in Science (ROLCG) 2015 Oct 28 (pp. 1-4). IEEE. (27 citări)
19. Suciu G, Cernat C, Todoran G, Suciu V, Poenaru V, Militaru T, **Halunga S**. A solution for implementing resilience in open source Cloud platforms. In2012 9th International Conference on Communications (COMM) 2012 Jun 21 (pp. 335-338). IEEE. (25 citări)
20. Boitan A, Bărtușică R, **Halunga S**, Popescu M, Ionuță I. Compromising electromagnetic emanations of wired USB keyboards. InFuture Access Enablers for Ubiquitous and Intelligent Infrastructures: Third International Conference, FABULOUS 2017, Bucharest, Romania, October 12-14, 2017, Proceedings 3 2018 (pp. 39-44). Springer International Publishing. (23 citări)
21. Andrei V, Popovici EC, Fratu O, **Halunga SV**. Development of an IEEE 802.21 media independent information service. In2010 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR) 2010 May 28 (Vol. 2, pp. 1-6). IEEE.(23 citări)
22. Boitan A, **Halunga S**, Bîndar V, Fratu O. Compromising electromagnetic emanations of usb mass storage devices. *Wireless Personal Communications*. 2020 Apr 23:1-26. (20 citări)
23. Sefati SS, **Halunga S**. A hybrid service selection and composition for cloud computing using the adaptive penalty function in genetic and artificial bee colony algorithm. *Sensors*. 2022 Jun 28;22(13):4873.(19 citări)
24. Suciu G, **Halunga S**, Fratu O, Vasilescu A, Suciu V. Study for renewable energy telemetry using a decentralized cloud M2M system. In2013 16th International Symposium on Wireless Personal Multimedia Communications (WPMC) 2013 Jun 24 (pp. 1-5). IEEE. (17 citări)
25. Dragulinescu AM, Dragulinescu A, Zamfirescu C, **Halunga S**, Suciu G. Smart Neighbourhood: LoRa-based environmental monitoring and emergency management collaborative IoT platform. In2019 22nd International Symposium on Wireless Personal Multimedia Communications (WPMC) 2019 Nov 24 (pp. 1-6). IEEE. (16 citări)
26. Fratu O, Vulpe A, Craciunescu R, **Halunga S**. Small cells in cellular networks: Challenges of future HetNets. *Wireless personal communications*. 2014 Oct;78:1613-27. (16 citări)
27. Andrei V, Popovici EC, Fratu O, **Halunga SV**. Solution for implementing IEEE 802.21 media independent information service. In2010 8th International Conference on Communications 2010 Jun 10 (pp. 519-522). IEEE. (16 citări)
28. Vizireanu DN, **Halunga S**, Fratu O. A grayscale image interpolation method using new morphological skeleton. In6th International Conference on Telecommunications in Modern Satellite, Cable and Broadcasting Service, 2003. TELSIS 2003. 2003 Oct 1 (Vol. 2, pp. 519-521). IEEE. (16 citări)
29. Boitan A, Kubiak I, **Halunga S**, Przybysz A, Stańczak A. Method of colors and secure fonts used for source shaping of valuable emissions from projector in electromagnetic eavesdropping process. *Symmetry*. 2020 Nov 20;12(11):1908.(14 citări)
30. Barca C, Barca C, Cucu C, Gavriiloaia MR, Vizireanu R, Fratu O, **Halunga S**. A virtual cloud computing provider for mobile devices. In2016 8th International Conference on Electronics, Computers and Artificial Intelligence (ECAI) 2016 Jun 30 (pp. 1-4). IEEE. (14 citări)
31. Suciu G, Suciu V, **Halunga S**, Fratu O. Big data, internet of things and cloud convergence for e-health applications. InNew Contributions in Information Systems and Technologies: Volume 1 2015 (pp. 151-160). Springer International Publishing.(14 citări)

32. Kubiak I, Boitan A, **Halunga S**. Assessing the security of TEMPEST fonts against electromagnetic eavesdropping by using different specialized receivers. *Applied Sciences*. 2020 Apr 19;10(8):2828.(13 citări)
33. Suciuc G, **Halunga S**, Ochian A, Suciuc V. Network management and monitoring for cloud systems. In *Proceedings of the 2014 6th International Conference on Electronics, Computers and Artificial Intelligence (ECAI) 2014 Oct 23* (pp. 1-4). IEEE.(13 citări)
34. Marcu I, **Halunga S**, Fratu O, Vizireanu D. Multiuser systems implementations in fading environments. *Applications of MATLAB in science and engineering*. 2011 Sep 9:167-80.(13 citări)
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### CAPITOLE DE CARTI publicate la edituri din străinătate

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2. G. Suciu, V. Suciu, Victor; S. Halunga, O. Fratu, , "Big Data, Internet of Things and Cloud Convergence for E-Health Applications",New Contributions in Information Systems and Technologies, p.151-160,2015, Springer International Publishing (ISBN978-3-319-16486-1, DOI 10.1007/978-3-319-16486-1)
3. Eduard-Cristian Popovici, Ioana-Manuela Marcu, Octavian Fratu, Simona-Viorica Halunga, „Location-Based Web System for Geographically Distributed Mobile Teamwork Management”in Advances in Intelligent Web Mastering-3, 2011, p. 217-224 (ISBN 978-3-642-18029-3)
4. I Marcu, S Halunga, O Fratu, D Vizireanu ” Multiuser Systems Implementations in Fading Environments”, capitol de carte in Matlab / Book 5 (2011), vol 5, sect 8, p167- 180.



5. CRACIUNESCU Razvan-Eusebiu, HALUNGA Simona Viorica, FRATU Octavian Enhanced Massive Machine Type Communications for 6G Era, 6G Enabling Technologies: New Dimensions to Wireless Communication River Publishers
6. Nor Ahmed M., FRATU Octavian, HALUNGA Simona Viorica Optimal Placement of Two IRSs in Beyond 5G Indoor Network Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, LNICST Springer International Publishing

#### ÎNDRUMARE DE LABORATOR ȘI CULEGERI DE PROBLEME

- I.1. I. Constantin, **S. Halunga**, I. Marcu - Comunicatii Analogice si Digitale, Culegere de probleme, (Analog and digital communication systems - problem solving) Editura Electronica 2000, Bucuresti, 2010, ISBN 978-973-7860-22-4, 150 pagini din 202 pagini
- I.2. I. Constantin, **S. Halunga**, I. Marcu „*Semnale și Sisteme - probleme*”(Signals and Systems - Problem solving ), Editura Electronica 2000, București, **2007** (149 pag.), ISBN 978-973-7860-07-1.
- I.3. **S. Halunga**, O. Fratu, “*Transmisiuni analogice și digitale. Îndrumar de laborator*” (Analog and digital transmissions - laboratory guide), Editura Electronica 2000, București, 2003 (149 pag.), ISBN 973-99878-0-X. , referenți Prof. Dr. Ing. I. Constantin, (UPB), Prof Dr Ing. I Marghescu (UPB), tiraj 200 buc
- I.4. D. Zamfirescu, O. Fratu, **S. Halunga**, Z. Gheldiu - “*Transmisiuni analogice și digitale*” (Analog and digital transmissions - laboratory guide)- îndrumar de laborator - Litografia UPB, București, 1995 (137 pag.), tiraj 100 buc.
- I.5. Fratu, **S Halunga** - “*Transmisiuni de date pe canale radio*”(Data transmissions on rado channels - laboratory guide)- îndrumar de laborator - Litografia UPB, București, 1997 (52 pag.), tiraj 100 buc.

#### H. Brevete naționale

1. **2020. Sistem de telemetrie pentru agricultură inteligentă adresat fermierilor și producătorilor agricoli, are set de componente de monitorizare, avertizare și sprijinire a deciziilor în cloud, care asigură vizualizarea și analiza datelor, notificărilor sau recomandărilor rezultate în urma analizei datelor.**  
 SMARTAGRO (TELEMETRY SYSTEM FOR INTELLIGENT AGRICULTURE)  
 Patent Number: RO135499A2  
 Publication Date: 2022-01-28  
 Application Number: RO202000442  
 Filing Date: 2020-07-27  
 Inventor : Marcu, Ioana - Manuela Fratu, Octavian **Halunga**, **Simona Viorica** Vulpe, RĂZVAN - Alexandru Florea, Carmen Marțian, Alexandru Drăgulinescu, Ana - Maria - Claudia Suci, George Suci, Gheorghe Bălăceanu, Cristina Mihaela Drosu, Alexandru Chevereșan, Romulus - Nicolae Miu, Delia  
 Assignee: UNIVERSITATEA POLITEHNICA DIN BUCUREȘTI BEIA CONSULT INTERNATIONAL S.R.L.  
 IPC: G16Y10/05  
 Abstract: The invention relates to a telemetry system for intelligent agriculture which is addressed to farmers and agricultural producers, as a support in decision-making related to irrigation and fertilization of agricultural land, as well as to crop growth. According to the invention, the system comprises the following components: I. a component of data acquisition from agricultural lots comprising sensors for monitoring parameters of interest, actuators and acquisition systems, II. a component for data processing based on the Edge Computing model which allows the processing of data streams from sensors, III. a wireless communication component mainly based on LPWAN (Low Wide Area Network) technology LoRa which performs the different data routing depending on the labeling performed in the component for data processing, IV. a component for grouping data of several lots; V. a component for monitoring, warning and supporting decisions in cloud, which provides for

the visualization and analysis of data, as well as of the notifications or recommendations resulting from the data analysis and VI. a mobile application for viewing the parameters of interest and the notifications.

- 2. 2018. Sistem Hardware de detectie a radiatiei cosmice de neutrini in sare**  
HARDWARE SYSTEM FOR DETECTING NEUTRIN-TYPE COSMIC RADIATION IN SALT  
Patent Number: RO133011A2  
Publication Date: 2018-12-28  
Application Number: RO201600959  
Filing Date: 2016-12-05  
Inventor : Savu, Valeriu Fratu, Octavian **Halunga**, **Simona Viorica** Crăciunescu,  
Răzvan-Eusebiu Voicu, Carmen Vulpe, Răzvan-Alexandru  
Assignee: UNIVERSITATEA POLITEHNICA DIN BUCUREȘTI  
IPC: G01T1/17  
Abstract: The invention relates to a hardware system for detecting neutrino-type cosmic radiation in salt rocks. According to the invention, the system consists of a hybrid network of radio detectors consisting of a radio station SR<sub>mkn</sub>, where m is equivalent with the x coordinate, k is equivalent with the y coordinate and n is equivalent with the z coordinate, where each radio station includes two antennas for horizontal polarization (1) and two antennas for vertical polarization (2), an impedance adapting circuit (3) for each antenna, an adder (4) for each polarization, a band-pass filter (5) for selecting the desired spectral components, several amplifiers (6) followed by a band-pass filter (7), an amplifier (8) followed by an anti-aliasing filter (9), an analogue-to-digital convertor (10), a FIFO memory (11), a local processing system of the radio station and a wireless transceiver coupled to a PC-type computer (12).
- 3. 2016 Centru de comunicatii COMM-CENTER**  
COMMUNICATION CENTER (COMM-CENTER)  
Patent Number: RO130954A2  
Publication Date: 2016-02-26  
Application Number: RO201400580  
Filing Date: 2014-07-30  
Inventor : Suci, Gheorghe Enache, Marius Suci, Victor Fratu, Octavian **Halunga**,  
**Simona Viorica** Suci, George Crăciunescu, Răzvan Eusebiu Vulpe, Răzvan Alexandru  
Stoica, Alexandru  
Assignee: BEIA CERCETARE S.R.L.  
IPC: H04M3/42  
Abstract: The invention relates to a call-center-type communication center meant to provide the unification of communications of various types: fixed and mobile telephony, e-mail, SMS etc. and to open the way for other applications of interactive communications not involving human operator. The communication center consists of two main components, namely: a digital telephone exchange (PBX) and a communication server (SC), meant for communication applications (AS), which integrates an application of interactive vocal response (IVR) which, in its turn, integrates a text-to-speech type application (TTS), which gives the possibility of voice mode transmission, in the Romanian language, of the texts recorded in a dynamic-content data base, and an application (ASR) of speech recognition of the speech-to-text type, which allows it to record a voice message, convert the same into text format and handle it as a document.
- 4. 2012. Metoda simpla si rapida pentru estimarea in timp real a frecventei instantanee a semnalelor sinusoidale individuale, utilizand patru esantioane temporale, pentru procesarea numerica a semnalelor in instrumentatia de masura portabila**  
SIMPLE AND ACCURATE METHOD FOR REAL-TIME ESTIMATION OF INSTANTANEOUS FREQUENCY OF INDIVIDUAL SINUSOIDAL SIGNALS, BY USING FOUR TEMPORAL POINTS, APPLICABLE TO DIGITAL PROCESSING IN PORTABLE INSTRUMENTATION Patent Number: RO127920A2  
Publication Date: 2012-10-30  
Application Number: RO201100239  
Filing Date: 2011-03-18

Inventor : Babarada, Florin Vizireanu, Dragos Nicolae Halunga, Simona Viorica

Assignee: UNIVERSITATEA POLITEHNICA BUCURESTI

IPC: G06F17/17

Abstract: The invention relates to a method for real-time estimation of instantaneous frequency of individual sinusoidal signals, applicable to digital processing of signals in the field of portable instrumentation. According to the invention, the method consists in using an analogue-digital converter (ADC) which obtains samples of an individual sinusoidal signal at a frequency four times higher than an instantaneous frequency of the signal, which are then quantized and transmitted to some digital signal processors (DSP) to process them while using only four temporally equally spaced samples which are enough for computing the instantaneous frequency and the amplitude of the individual sinusoidal signals.  
Email

## I. Director de proiecte de cercetare internațională

1. 6G-ICARUS - „6G Intelligent Connectivity And inteRaction for Users and infraStructures”, proiect HEU tip HORIZON-TMA-MSCA-SE nr. 101131342, acceptat în cadrul apelului HORIZON-MSCA-2022-SE-01, (coord. Aristotle University of Thessaloniki, Grecia, 22 parteneri din Europa, Statele Unite, Brazilia și Australia), Responsabil UPB: S. Halunga, , buget 69000 euro (UPB) din total 501000 euro, (durata 4 ani:2024-2028)
2. MOTOR5G- „MObility and Training FOR beyond 5G Ecosystems”, proiect H2020 tip H2020-MSCA-ITN nr. 861219, acceptat în cadrul apelului H2020-MSCA-ITN-2019, (coord. Aarhus University, Danemarca, 9 parteneri din Danemarca, Marea Britanie, Grecia, Italia, Bulgaria, Spania și România), Responsabil UPB: S. Halunga, , buget 439 182,72 euro (UPB) din total 3 979 000,80 euro, (durata 6 ani:2019-2025)
3. REDICT—Regional Economic Development by ICT/New media clusters”, proiect FP7 tip CSA nr. 206480, acceptat în cadrul apelului FP7-REGIONS-2007-1, (coord. City of Amsterdam, 17 parteneri din Olanda, Germania, Franța, România, Irlanda și Danemarca) , Responsabil UPB: S. Halunga, , buget 27000 euro (UPB), (durata 2 ani:2008-2009)

## J. Director de proiecte de cercetare națională

1. 2022-2024-„Mobilitate și Training pentru și dincolo de ecosistemele 5G (MOTOR-5G\_Ro)”, contract (grant) nr. 69 / 2022, proiect de cercetare în parteneriat finanțat de UEFISCDI prin PN3, coordonator și unic partener Universitatea POLITEHNICA din București (UPB), Director de proiect Prof. S. Halunga, durata 33 luni (2022-2024), buget UPB și total 160480 lei.
2. 2017-2018-„Sistem OFDM bazat pe utilizarea FFT cu argument neîntreg (FractOFDM)”, contract (grant) nr. 213PED / 2017, proiect de cercetare în parteneriat finanțat de UEFISCDI prin PN3, coordonator Universitatea Tehnică "Gheorghe Asachi" din Iași, partener UPB, Responsabil UPB Prof. S. Halunga, durata 18 luni (2017-2018), buget UPB 145000 lei din total 475000 lei.
3. 2012-2016-“Scalable Radio Transceiver for Instrumental Wireless Sensor Network (SaRaT-IWSN)”, contract (grant) nr. 20/2011, proiect de cercetare PNCDI II de tip parteneriat (coordonator: UPB, participanți: Beia Consult International SRL, IFIN-HH), Director de proiect și coordonator UPB: Prof. S. Halunga, buget total 2950000 lei, din care UPB: 1570000 lei (durata 4 ani: 2012-2016).
4. 2009-2011 S Halunga (coord, UPB). D Vizireanu, I Marcu, “CONTRIBUTII LA DEZVOLTAREA ALGORITMILOR DE PRELUCRARE SI CODARE A SEMNALELOR VIDEO IN SISTEME WIRELESS MULTIUTILIZATOR PRIN OPTIMIZAREA PARAMETRIILOR DE CALITATE PSIHOPERCEPTUALA”, contract de cercetare UPB-CNCSIS, cod CNCSIS 1695/2009, valoare contract 898516 RON
5. 2005-2008- S Halunga (coord, științific UPB), O Fratu, S Ciocchină, I Marghescu, Ș Obreja, M Udrea, I Marcu: SIUM „Sistem integrat pentru utilizatorul mobil”, Contract de cercetare de excelență, nr 80/03.10.2005 (coordonator general: ICI, director coordonator mat. Emil

Stănescu, 3 participanți: UPB, ASE, UPIT), subcontract UPB-ICI nr 832/10.10.2005. Nivel de finanțare: 352000 RON;

6. 2004-2007: S. Halunga, (coord) I. Berca, O Fratu. ș.a. "Tehnici optimale și cvasioptimale de codare și prelucrare a datelor pentru sistemele de generații a 3a și a 4a" contract de cercetare tip A UPB - ANSTI, nr 1389/2004, tema 33. Nivel de finanțare 28500 RON
7. 2001-2003- S. Halunga (coord.), O. Fratu, D Vizireanu, ș.a. "Metode algoritmice de îmbunătățire a performanțelor receptoarelor la sistemele DS-CDMA / UMTS", contract de cercetare tip A UPB - ANSTI, nr 7072/2001, tema B12, contract de cercetare tip A UPB - CNCSIS, nr 33784/23.07.2002, tema 141, cod CNCSIS 208a
8. 1999-2002- S. Halunga (coord.), O. Fratu, D Vizireanu, ș.a. "Dezvoltarea și implementarea algoritmilor de prelucrare numerică neliniară a semnalelor video", contract de cercetare UPB - ANSTI, nr 14-20-09 .