Europass Curriculum Vitae

Personal information

First name / Surname	**Lavric Alexandru**
Address	Str. Vasile Gemeniuc,Sfantu Ilie, Scheia, jud. Suceava (Romania)
Telephone	0740 084569
E-mail	lavricalexandru@gmail.com lavric@eed.usv.ro
Nationality	Romanian
Date of birth	25/04/1987
Gender	Male

Work experience

Dates	02/02/2019 →present
Occupation or position held	**Lecturer**
Main activities and responsibilities	Teaching activities: Computer Science, Web Design, Computer networks, Numerical Methods, Analog Electronic Devices, IoT (Internet of Things), LoRa Networks, SigFox Research domains: IoT, Smart City Concept and its applications, Wireless Sensor Networks WSN, Wireless communication protocols
Name and address of employer	"Ştefan cel Mare" University of Suceava, Faculty of Electrical Engineering and Computer Science
Dates	01/07/2014 →present
Occupation or position held	**Network Architect Engineer**
Main activities and responsibilities	Maintaining, designing and testing of communications networks
Name and address of employer	EUROSPEED
Dates	01/07/2014 →present
Occupation or position held	**Postdoctoral Researcher**
Main activities and responsibilities	Research domains: Smart City Concept and its applications, Wireless Sensor Networks WSN-(IEEE 802.15.4), Wireless communication protocols
Name and address of employer	"Ştefan cel Mare" University
Dates	07/04/2015 →31.06.2015
Occupation or position held	**Software Developer**
Main activities and responsibilities	Algorithms/Programming techniques, Coding standards MISRA, Testing techniques**,** Automotive ECU Testing
Name and address of employer	Continental Automotive Sibiu
Dates	01/10/2011 →15/01/2014
Occupation or position held	**Teaching Assistant (Part Time)**
Main activities and responsibilities	Teaching activities: Information Technology – course, Computer Science, Computer networks (TCP / IP, 802.11, HTML, PHP, CSS), Databases (SQL), Analog Electronic Devices
Name and address of employer	"Ştefan cel Mare" University of Suceava
Dates	1/10/2010 →1/10/2013

Occupation or position held	**Research Assistant QDOC Project**
Main activities and responsibilities	Research domains: Wireless Sensor Networks WSN-(IEEE 802.15.4), Wireless communication protocols, Computer Networks, ZigBee Networks, PLC (Power Line Communication) - IEEE P1901 HF-RFID systems, Hardware Development, Smart Sensors, Routing Algorithms
Name and address of employer	"Ştefan cel Mare" University of Suceava, Faculty of Electrical Engineering and Computer Science

Education and training

Dates	1/10/2010→28/11/2013
Title of qualification awarded	**PhD. in Electronics and Telecommunication**
Principal subjects/occupational skills covered	Thesis Title: „CONTRIBUTIONS TO THE DEVELOPMENT OF STREET LIGHTING SYSTEMS", "Magna cum laude" mention Main research areas are: lighting control systems, WSN, wireless communication technologies, computer networks, microcontrollers, ZigBee networks.
Name and type of organisation providing education and training	"Ştefan cel Mare" University of Suceava, Faculty of Electrical Engineering and Computer Science
Dates	01/10/2010 → 10/06/2012
Title of qualification awarded	**Master studies in Computer and Communications Networks**
Name and type of organisation providing education and training	"Ştefan cel Mare" University of Suceava, Faculty of Electrical Engineering and Computer Science
Dates	01/10/2005 → 10/06/2009
Title of qualification awarded	**Bachelor diploma in Electronics and Telecommunication Engineering**
Name and type of organisation providing education and training	"Gh. Asachi" Technical University, Faculty of Electronic Telecommunication and Information Technology, Iasi
Dates	01/10/2008 → 10/06/2010
Title of qualification awarded	**Master studies in Business Affairs**
Name and type of organisation providing education and training	"Ştefan cel Mare" University of Suceava, Faculty of Faculty of Economics and Public Administration
Dates	01/10/2005 →10/06/2008
Title of qualification awarded	**Bachelor diploma in Administrative Sciences**
Name and type of organisation providing education and training	"Ştefan cel Mare" University of Suceava, Faculty of Faculty of Economics and Public Administration

Personal skills and competences

Mother tongue(s) **Romanian**

Other language(s) **English**

Self-assessment	Understanding				Speaking				Writing	
European level (*)	Listening		Reading		Spoken interaction		Spoken production			
English	C2	Experienced user	C1	Experienced user	B2	Independent user	B2	Independent user	B1	Independent user
French	A2	Elementary	A2	Elementary	A2	Elementary	A2	Elementary	A2	Elementary

(*) Common European Framework of Reference for Languages

Social skills and competences	Team spirit, Leadership capabilities, Very good communication and negotiation skills, Great capacity for analysis and synthesis of data and information, Attention to details, Resistance to stress, Ability to work with deadlines, Sociable and communicative, Dynamic, flexible and open to new ideas, Excellent interpersonal and written communication skills,
Technical/Computer skills and competences	Hardware & Software knowledge in electronics and computers, Skills in using laboratory Equipment, Deep knowledge of WSN ZigBee/ IEEE 802.15.4 and IPv6oWPAN technologies, Deep knowledge of Wireless Communication Technologies, Data Mining/ Prediction, Algorithms, Smart sensor programming, Hardware design and development. Lavric Alexandru published as author or coauthor more than **60 scientific papers** presented at national or international conferences and published in journals of international interest.
Research Projects	"Improvement of the doctoral studies quality in engineering science for development of the knowledge based society- QDOC" contract no. POSDRU/107/1.5/S/7853. „SOCERT. Knowledge society, dynamism through research", contract number POSDRU/159/1.5/S/132406. "Intelligent conductive charging stations, fixed and mobile, for electrical propulsion transport (SMiLE-EV)", PN-III-P1-1.2-PCCDI-2017-0776/No. 36 PCCDI/15.03.2018. "Mommypreneurs", EEA and Norway Grants Fund for Youth Employment Mommypreneurs, 2017-1-277.

Publication (Selection)

1. **Lavric, A.,** Petrariu, A.I., Coca, E. and Popa, V., 2020. LoRa Traffic Generator Based on Software Defined Radio Technology for LoRa Modulation Orthogonality Analysis: Empirical and Experimental Evaluation. Sensors, 20(15), p.4123, 2020, ***Q1 Rank Journal***.
2. **A. Lavric**, V. Popa, H. Takahashi and S. Yousefi, "Detecting Keratoconus from Corneal Imaging Data using Machine Learning," in IEEE Access, doi: 10.1109/ACCESS.2020.3016060.
3. Alexandru Lavric Scalability Analysis Under Large-Scale, High-Density Conditions," in IEEE Access, vol. 7, pp. 35816-35825, 2019. doi: 10.1109/ACCESS.2019.2903157 Article (CrossRef Link) ***Q1 Rank Journal***, **IF:4,098, SRI: 2,047**.
4. **Alexandru Lavric** and Popa Valentin, "KeratoDetect: Keratoconus Detection Algorithm Using Convolutional Neural Networks," Computational Intelligence and Neuroscience, vol. 2019, Article ID 8162567, 9 pages, 2019. Article (CrossRef Link) ***Q2 Rank Journal***, **IF:2,154, SRI: 0,634**
5. **Alexandru Lavric**, "LoRa (Long-Range) High-Density Sensors for Internet of Things," Journal of Sensors, vol. 2019, Article ID 3502987, 9 pages, 2019. Article (CrossRef Link) ***Q2 Rank Journal***, **IF:2,024, SRI: 0,910.**
6. **Alexandru Lavric** and Valentin Popa, "Performance Evaluation of LoRaWAN Communication Scalability in Large-Scale Wireless Sensor Networks," Wireless Communications and Mobile Computing, vol. 2018, Article ID 6730719, 9 pages, 2018. Article (CrossRef Link) ***Q3 Rank Journal*** **IF:1,396, SRI: 0,517.**
7. Petrariu, A.I., Lavric, A. and Coca, E., 2018. Design of an High Frequency RFID Multi-Loop Antenna for Applications in Metallic Environments. Advances in Electrical and Computer Engineering, 18(2), pp.35-41. WOS:000434245000005. ***Q3 Rank Journal*** **IF: 0.650, SRI: 0.190.**
8. Răboacă, M.S.; Badea, G.; Enache, A.; Filote, C.; Răsoi, G.; Rata, M.; **Lavric, A**.; Felseghi, R.-A. Concentrating Solar Power Technologies. Energies 2019, 12, 1048, ***Q3 Rank Journal*** **IF: 2.707, SRI: 0.601.**
9. Adrian I. Petrariu, **Alexandru Lavric,** Eugen Coca, Renewable Energy Powered LoRa-based IoT Multi Sensor Node, 2019 IEEE 25th International Symposium for Design and Technology in Electronic Packaging (SIITME) (IEEE EXPLORE)
10. **Lavric, A**. and Petrariu, A.I., 2018, May. LoRaWAN communication protocol: The new era of IoT. In 2018 International Conference on Development and Application Systems (DAS) (pp. 74-77). IEEE.WOS:000467080400014
11. A. I. Petrariu, **A. Lavric** and E. Coca, ""VLC for vehicular communications: A multiple input multiple output (MIMO) approach,"" 2018 International Conference on Development and Application Systems (DAS), Suceava, 2018, pp. 134-137. WOS:000467080400025, doi: 10.1109/DAAS.2018.8396085
12. **Alexandru Lavric**, Valentin Popa, LoRa Wide-Area Networks from an Internet of Things Perspective, ECAI 2017 - International Conference – 9th Edition Electronics, Computers and Artificial Intelligence,pp.1-4, 2017, DOI: 10.1109/ECAI.2017.8166397 (WOS: WOS:000425865900013).
13. **Alexandru Lavric,** Valentin Popa, Internet of Things and LoRa Low-Power Wide-Area Networks Challenges, ECAI 2017 - International Conference – 9th Edition Electronics, Computers and Artificial Intelligence, pp.1-4, 2017, DOI: 10.1109/ECAI.2017.8166405, WOS: WOS:000425865900021.
14. **Alexandru Lavric**, Valentin Popa, „A LoRaWAN: Long Range Wide Area Networks Study", 11-th International Conference on Electromechanical and Power Systems (SIELMEN 2017), pp. 435-438, DOI: 10.1109/SIELMEN.2017.8123360, (IEEE). WOS:000426906000079
15. **Alexandru Lavric**, Adrian I. Petrariu and Valentin Popa, SigFox Communication Protocol: The New Era of IoT?, International

Symposium on Sensors and Instrumentation in IoT Era August 29-30, 2019, Lisbon, Portugal, (IEEE EXPLORE)

16. Adrian I. Petrariu, **Alexandru Lavric**, Eugen Coca, LoRaWAN Gateway: Design, Implementation and Testing in Real Environment, 2019 IEEE 25th International Symposium for Design and Technology in Electronic Packaging (SIITME) (IEEE EXPLORE)
17. **Alexandru Lavric**, Valentin POPA, The Design and Implementation of a Street Lighting Control System using a 802.11 Communication Protocol: A Case Study, Buletinul AGIR nr. 3 (5th International Symposium on Electrical Engineering and Energy Converters), pp. 1-5, 2013 (ISSN 1224-7928), (BDI: Index Copernicus International, Academic Keys);
18. Males Codrin, Popa Valentin, **Lavric Alexandru**, Finis Ilie, Performance Evaluation of Power Line Communications over Power Transformers, 2012 20th Telecommunications Forum (TELFOR), pp. 627-630, 2012, DOI: 10.1109/TELFOR.2012.6419288, (ISI Proceedings);
19. D. Simion, M.F. Ursuleanu, A. Graur, A.D. Potorac, **A. Lavric**, Efficiency Consideration for Data Packets Encryption within Wireless VPN Tunneling for Video Streaming, International Journal of Computers, Communications & Control (IJCCC), pp. 112-122, Vol. 8, nr.1, 2013, ISSN: 1841-9844 revistă cotată ISI, având factorul de impact 0,441 pentru anul 2012;
20. Daniel Simion, Adrian Graur, **Lavric Alexandru**, Ali Haider Mahdi, An Optimize Particle Swarm Optimization Routing Algorithm for Data Transmission in Cognitive Radio Networks, International Symposium on Electronics and Telecommunications (ISETC), pp. 213-216, 2012, DOI: 10.1109/ISETC.2012.6408148 (ISI Proceedings);
21. **Alexandru Lavric**, Valentin Popa, Codrin Males, Ilie Finis, New Technologies in Street Lighting, Buletinul AGIR nr. 2 (International Word Energy System Conference -WESC), pp. 811-816, 2012, (BDI: Index Copernicus International, Academic Keys);
22. **Alexandru Lavric**, Valentin Popa, Codrin Males, Ilie Finis, Design And Performance Evaluation Of A Low Cost Automatic Gain Control Circuit, Buletinul AGIR nr. 2 (International Word Energy System Conference -WESC), pp. 263-269, 2012, (BDI: Index Copernicus International, Academic Keys);
23. **Alexandru Lavric**, Valentin Popa, Codrin Males, Ilie Finis, A Performance Study of ZigBee Wireless Sensors Network Topologies for Street Lighting Control Systems, International Workshop on Mobile Ad-Hoc Wireless Networks iWMANET, France, pp. 130-133, 2012 DOI: 10.1109/iCOST.2012.6271280, (BDI IEEE Explore);
24. **Lavric Alexandru**, Valentin Popa, Comparative analysis of communication protocols and routing algorithms used in street lighting control systems, Revista Sisteme Distribuite (Suceava - online), pp. 32-35, ISSN 1842-6808, Suceava, 2011;
25. S. Sfichi, A. Graur, V. Popa, I. Finis, **A. Lavric,** Innovative Movement Monitoring System for Elderly using Passive Infrared and Linear Phased Antenna Arrays, WSEAS International Conference on Automatic Control, Modelling & Simulation (ACMOS13), pp.219 - 225, 2013, ISBN: 978-1-61804-189-0 (BDI);
26. **Alexandru Lavric**, Valentin Popa, Ilie Finis, Codrin Males, Performance evaluation of Tree and Mesh ZigBee Network Topologies used in Street Lighting Control Systems, Przeglad Elektrotechniczny, nr. 4, pp. 168-171, 2013, (BDI INSPEC, SCOPUS);
27. **Alexandru Lavric**, Valentin Popa, Performance evaluation of topology control algorithms that can be integrated into a street lighting control sensor network, RoEdu International Conference, pp. 1-4, 2013, DOI: 10.1109/RoEduNet.2013.6511741 (ISI Proceedings);
28. **Alexandru Lavric**, Valentin Popa, Ilie Finis, Adrian M. Gaitan, Adrian I. Petrariu, Packet Error Rate Analysis of IEEE 802.15.4 under 802.11g and Bluetooth Interferences, 9th International Conference on Communications, COMM 2012, pp. 259-262, 2012 DOI: 10.1109/ICComm.2012.6262616, (ISI Proceedings);
29. **Alexandru Lavric**, Valentin Popa, Ștefan Sfichi, Adaptive Channel Selection Algorithm for a Large Scale Street Lighting Control ZigBee Network in the Presence of WLAN Interference, Elektronika ir Elektrotechnika Journal, Vol. 19, Nr. 9, pp. 105-109, 2013, revistă cotată ISI, având factorul de impact 0,411 pentru anul 2012 (ISSN 1392-1215);
30. **Lavric Alexandru**, Popa Valentin, Finis Ilie, Males Codrin Găitan Adrian-Mihai, An original lighting monitoring and control system using Wireless Sensor Networks, Proceedings of the Fifth European Conference on the Use of Modern Information and Communication Technologies ECUMICT, 2012, pp. 167 – 173;
31. **Alexandru Lavric**, Valentin Popa, Ilie Finis, Daniel Simion, The design and implementation of an energy efficient street lighting monitoring and control system, Przeglad Elektrotechniczny, Nr. 11, pp. 312-316, 2012 revistă cotată ISI, având factorul de impact 0,244 pentru anul 2011;
32. **Alexandru Lavric**, Valentin Popa, Ilie Finis, The Design of a Street Lighting Monitoring and Control System, International Conference and Exposition on Electrical and Power Engineering (EPE), pp. 314-317, 2012 DOI: 10.1109/ICEPE.2012.6463912, (BDI IEEE Explore);
33. **Alexandru Lavric**, Valentin Popa, The Hardware Design of a Street Lighting Control with Vehicle and Malfunction Detection, The 8th International Symposium on Advanced Topics In Electrical Engineering Bucharest May 23-25, pp. 1-4, 2013 DOI : 10.1109/ATEE.2013.6563532 (BDI IEEE Explore);
34. **Alexandru Lavric**, Valentin Popa, The Design and Development of a Street Lighting Monitoring and Control System, Development and Application Systems International Conference, Doctoral Symposium –Poster Presentation, Suceava, pp. 57, 2012, ISSN: 1844-5020;
35. **Alexandru Lavric**, Valentin Popa, A Traffic Prediction Algorithm for Street Lighting Control Efficiency, Journal of Applied Computer Science & Mathematics, no. 15 (7), pp. 13-17, 2013, (ISSN: 2066-4273, BDI, B+: Directory of Open Access Journals - DOAJ, ICAAP- Journal database, Zentralblatt Math, EBSCO, Ulrich's Periodical Directory, Index Copernicus).
36. A.-I. Petrariu, V. Popa, V.-G. Gaitan, **I. Finis**, A. Lavric, 13.56 MHz RFID multi-turn antenna for metallic environments, ECUMICT 2012, European Conference on the Use of Modern Information and Communication Technologies, Gent, Belgium, pp. 187-196, 2012;
37. **I. Finis**, V. Popa, A. Lavric, C. Males, S. Sfichi, Performance Evaluation of 13.56 MHz RFID Antenna Operating in Metallic Environments, 20th Telecommunications forum TELFOR 2012 Serbia, Belgrade, November 20-22, pp. 1210-1213, DOI: 978-1-4673-2984-2/12, IEEE, 2012, (BDI IEEE Explore);

38. **I. Finis**, V. Popa, A. Lavric, A.-I. Petrariu and C. Males, An Analytical Determination of the Reading Volume for an HF RFID Antenna, 2012 2nd Baltic Congress on Future Internet Communications (BCFIC), pp. 170-173, 2012, DOI: 10.1109/BCFIC.2012.6217998, (BDI IEEE Explore);
39. I. Finis, V. Popa, **A. Lavric**, A Mathematical Approach of a HF RFID Multi Loop Antenna for Metallic Environments, International Conference and Exposition on Electrical and Power Engineering (EPE 2012), pp. 679 - 682, 2012, DOI: 10.1109/ICEPE.2012.6463854, (BDI IEEE Explore);
40. I. Finis, **A. Lavric**, „The Design of a HF RFID Tag Antenna for Warehouse Management", Research and Science Today No. 2(4)/2012, pp 134-141, ISSN: 2247 – 4455, 2012.
41. I. Finis, V. Popa, **A. Lavric**, A.-I. Petrariu, S. Sfichi, The Design and Implementation of a HF RFID Loop Antenna for Metallic Environments, 11th International Conference on Development and Application Systems, Suceava, Romania, pp. 66-69, ISSN: 1844-5020, 2012;
42. I. Finis, V. Popa, A.-I. Petrariu, **A. Lavric**, A.-M. Gaitan, Smart shelves architecture for warehouse management using HF RFID, ECUMICT 2012, European Conference on the Use of Modern Information and Communication Technologies, Gent, Belgium, pp. 253-260, 2012;
43. Adrian-Mihai Găitan, Valentin Popa, Vasile-Gheorghita Găitan, Adrian-Ioan Petrariu, **Alexandru Lavric**, Simona-Anda Gherasim, „Rfid Network Traffic Analysis Based On An Empirical Model," 9th International Conference on Communications, COMM 2012, pp 201-204, 2012 (ISI Proceedings).
44. Codrin Males, Valentin Popa, **Alexandu Lavric**, Ilie Finis, „PLC performance evaluation through a power transformer using PRIME," World Energy System Conference, pp. 257-262, 2012.
45. Codrin Males, Valentin Popa, **Alexandru Lavric**, Ilie Finis, Mihai Ursuleanu, „Contributions to automatic meter reading using power line communications", The Doctoral Summer School on Evolutionary Computing in Optimisation and Data Mining (ECODAM), Iasi, 2012.
46. Maleş Codrin, Popa Valentin, **Lavric Alexandru,** „An original AMR Architecture using a PLC protocol," International Conference of Scientific Paper AFASES, "Henri Coanda" Air Force Academy, Braşov, pp. 561-564, 2012.
47. **Lavric Alexandru**, Popa Valentin, Sfichi Stefan, "Street lighting control system based on large-scale WSN: A step towards a smart city," Electrical and Power Engineering (EPE), 2014 International Conference and Exposition on, vol., no., pp.673-676, 16-18 Oct. 2014 doi: 10.1109/ICEPE.2014.6969994, (BDI Thomson Reuters ISI Conference Proceedings Citation Index, IEEE Xplore);
48. **Alexandru Lavric**, Valentin Popa, "Semi-Anechoic Chamber Power Measurements of a WSN transceiver for Smart City Concept Validation", International Symposium on Electronics and Telecommunications 2014 Eleventh Edition, Timișoara, pp.63-66, (BDI Thomson Reuters ISI Conference Proceedings Citation Index, IEEE Xplore);
49. **Alexandru Lavric**, Valentin Popa, „Large- Scale Wireless Sensor Networks: A Step Towards A Smart City", Research and Science Today Journal, No.1(9)/2015, pp.113 – 118, 2015 (ISSN-p:2247–4455), (BDI);
50. **Alexandru Lavric**, Valentin Popa, "Performance evaluation of routing algorithms that can be used in Smart City Concept", Przegląd Elektrotechniczny, Vol 2015, No 8, pp.97-100 (BDI);
51. **Alexandru Lavric**, Valentin Popa, " Performance Evaluation of Large-Scale Wireless Sensor Networks Communication Protocols that can be integrated in a Smart City", International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, Volume 4, Issue 5, May 2015, pp. 4136 – 4141, 2015 (ISSN-p: 2320-3765);

Active Reviewer (selection):

1.IEEE Internet of Things Journal
2.IEEE Transactions on Industrial Informatics
3.MDPI Algorithms
4.MDPI Sensors
5.MDPI Electronics
6.MDPI Journal of Sensor and Actuator Networks
7.IET Communications
8.Eye and Vision Journal
10.IEEE Access