







PERSONAL INFORMATION



**Josip Balen, PhD, Assistant Professor**

-  Cara Hadrijana 10b, 31000 Osijek, Croatia – [Google maps](#)
-  +385 31 495 424  On request
-  [josip<DOT>balen<AT>ferit.hr](mailto:josip<DOT>balen<AT>ferit.hr)
-  <http://www.efos.unios.hr/~jbalen/> || <http://hr.linkedin.com/in/josipbalen>
-  Skype: josip.balen

Sex Male | Date of birth 05/04/1983 | Nationality Croatian

POSITION APPLIED FOR

WORK EXPERIENCE

June 2021 - present

**Associate professor**  
**Faculty of Electrical Engineering, Computer Science and Information Technology Osijek (Croatia)**

Teaching: Mobile Applications Development, Programming systems, Operating Systems, Intelligent Transportation Systems  
 Scientific research in a field of ITS, AI, Robotics  
 Organization, promotion, management  
**Business or sector** Higher Education and Science

January 2016 – May 2021

**Assistant professor**

Faculty of Electrical Engineering, Computer Science and Information Technology Osijek (Croatia)  
 Teaching: Mobile Applications Development, Programming systems, Operating Systems, Intelligent Transportation Systems  
 Scientific research in a field of Intelligent Transportation Systems  
 Organization, promotion, management  
**Business or sector** Higher Education and Science

September 2015 - present

**Technological and Business Consultant**

Owner of a personal consultant company “Gamma” (Croatia)  
 Projects Evaluation, Writing and Application, and Consultant services  
**Business or sector** Management Consulting, Strategy, Business Development, ICT, Mobile Applications, Intelligent Transportation Systems

October 2014 – January 2016

**Postdoctoral researcher**

Faculty of Electrical Engineering in Osijek (Croatia)  
 Scientific research in a field of VANETs:  
 ▪ V2V, V2I and DTN communication models  
 ▪ Using Parked Vehicles to improve communication  
 ▪ Using Smartphones and Mobile Applications for real-world testing of VANET protocols  
**Business or sector** Higher Education and Science

December 2008 - October 2014

**Assistant and PhD Student**

Faculty of Electrical Engineering in Osijek (Croatia)  
 ▪ Scientific research in area of VANETs, WSNs and Windows OSs  
 ▪ Laboratory exercises with students in courses: Basic Programming and Operating Systems  
**Business or sector** Higher Education and Science

January 2008 – December 2008

**Programmer**

PBZ d.d. in Slavonski Brod (Croatia)

- Database administration (Oracle, PL/SQL)
- Development of banking software solutions

**Business or sector** Banking and Databases

November 2005 – January 2008

**Operation manager and lecturer**

Memoria private school

- Teacher on various informatics courses
- Company manager

**Business or sector** Private school of informatics and foreign languages**CONSULTANT AND  
EVALUATION EXPERIENCE**

February 2021

**Higher Education and Science Evaluator****Higher Education Quality Agency, Academic Information Centre (AIC), Riga, Latvia**

- Panel expert for the re-accreditation of study field "Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science" at the Turība University, Riga Latvia

**Business or sector** Management Consulting, Strategy, Business Development, Higher Education and Science

October 2020

**Higher Education and Science Evaluator****Croatian Agency Science and Higher Education (AZVO)**

- Panel expert for the re-accreditation of Rochester Institute of Technology (RIT) Croatia, Dubrovnik

**Business or sector** Management Consulting, Strategy, Business Development, Higher Education and Science

March 2020

**Higher Education and Science Evaluator****Croatian Agency Science and Higher Education (AZVO)**

- Panel expert for the re-accreditation of Polytechnic of Rijeka, Croatia

**Business or sector** Management Consulting, Strategy, Business Development, Higher Education and Science

March 2019 – present

**Technological and Business Evaluator and Consultant**

WYG Group Ltd

- Evaluation of 46 innovation projects from European Structural and Investment Funds Call in ICT, IoT, ITS sectors

**Business or sector** Evaluation Management Consulting, ICT, ITS, IoT

February 2019 – present

**Consultant for Project Writing**

Small and medium-sized enterprises (SMEs)

- Writing 4 EUROSSTARS projects from ICT, IoT, ITS sectors with Research and Development activities

**Business or sector** Management Consulting, Strategy, Business Development

**May 2019 Business Technical and Technological Evaluator**

Croatian Agency for SMEs, Innovations and Investments (HAMAG-BICRO)

- Evaluation of two EUREKA projects from the ICT sector with Research and Development activities

**Business or sector** Evaluation Management Consulting, ICT

**July 2016 – January 2019 Technological and Business Consultant**

Croatian Agency for SMEs, Innovations and Investments (HAMAG-BICRO)

- Evaluation of three EUREKA projects and monitoring of one project from the ICT sector with Research and Development activities (2.5 years in total)

**Business or sector** Management Consulting, Strategy, Business Development, ICT, Mobile Applications

**November 2018 Higher Education and Science Evaluator**

Croatian Agency Science and Higher Education (AZVO)

- Panel expert for the re-accreditation of Faculty of Traffic Sciences, University of Zagreb

**Business or sector** Management Consulting, Strategy, Business Development, Higher Education and Science

**April 2018 Higher Education and Science Evaluator**

Croatian Agency Science and Higher Education (AZVO)

- Panel expert for the re-accreditation of Faculty of Electrical Engineering and Computing, University of Zagreb

**Business or sector** Management Consulting, Strategy, Business Development, Higher Education and Science

**September 2015 Technological and Business Evaluator**

Croatian Agency for SMEs, Innovations and Investments (HAMAG-BICRO)

- Evaluation of three international project proposals from the ICT sector with Research and Development activities for SMEs

**Business or sector** Management Consulting, Strategy, Business Development, ICT

**IEEE EXPERIENCE**

September 2013 – present

**IEEEmadC - a global project on mobile application development**

IEEE

- Project and contest founder
- Contest chair
- Everything else what needed

**Business or sector** Organization and Leadership

February 2015 – present

**IEEE Computer Society Member & Geographic Activities Board**

IEEE, Computer Society

- Serving as Member of Awards and Recognition Committee (Merwin Award)

**Business or sector** Organization and Leadership

October 2014 - present

**Counselor of IEEE Student Branch Osijek**

IEEE, Region 8, Croatia section

- Organizing lectures, workshops and contents for students
- Various administration and marketing tasks

**Business or sector** Organization and Leadership

January 2013 – December 2018

### IEEE Croatia Section Executive Committee (ExCom)

IEEE, Region 8, Croatia section

- Public visibility coordinator
- vTools Coordinator
- Awards coordinator

**Business or sector** Organization and Leadership

January – December 2015

### Corresponding member of IEEE Region 8 Young Professionals AG

IEEE, Region 8

- Entrepreneurship
- Engaging with PA and SAC and LifeMembers

**Business or sector** Organization and Leadership

July 2012 – December 2014

### IEEE Computer Society Region 8 Student Ambassador

IEEE, Region 8, Computer Society

- Serving as liaison between the IEEE Computer Society Member and Geographic Activities Board and student members in Region 8

**Business or sector** Organization and Leadership

April 2010 – September 2014

### Chair and vice chair of IEEE Student Branch Osijek

IEEE, Region 8, Croatia section

- Organizing lectures, workshops and contents for students
- Various administration and marketing tasks

**Business or sector** Organization and Leadership

## EDUCATION

December 2008 – October 2014

### PhD in Computer Science (Communications and Informatics)

Faculty of Electrical Engineering, Computer Science and Information Technology Osijek (Croatia)

- Research field based on Vehicular Ad Hoc Networks (V2V, V2I and DTN communication)

October 2001 – January 2008

### Master Engineer in Computer Science

Faculty of Electrical Engineering in Osijek (Croatia)

- Basic programming, mathematics and engineering skills acquired

## PERSONAL SKILLS

Mother tongue(s)

Croatian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C1	C1	C1
TELC certificate (B2 level).					

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user  
Common European Framework of Reference for Languages

- Computer skills**
- C/C++
  - Omnet++/Mixim/Veins
  - SUMO
  - Java / Android
  - Benchmarking Operating Systems
- Other Jobs/Hobbies**
- Startup pitching and ideas developing (Startup camp Vis, 27. - 31. Aug 2012.)
  - Editor in chief of the radio show "Geeks on a Plane" on TV Radio UNIOS ETFOS (<http://radio.etfos.hr>)
  - Fire Officer and member of the volunteer fire brigade
- Other skills**
- Beside my extraordinary self-references I have also the following qualities:
- Totally different from others
  - Innovative – I have a hundred of "million-dollar ideas"
  - Multipractic – I CAN do everything (from farming to space travel)
  - For me EVERYTHING is possible
  - Sometimes crazy (in a positive sense)
  - Still naïve (I still think that I can change the world:)
- Driving licence**
- A and B category

## AWARDS AND RECOGNITIONS

---

- **IEEE Senior Member – August 2020**

IEEE Senior Membership is an honor bestowed only to those who have made significant contributions to the profession.

- **IEEE MGA Larry K. Wilson Transnational Award – December 2018**

"For pioneering, championing, and leading IEEEemacC, a global project with transnational impact."

- **IEEE MGA Innovation Award – December 2017**

"For championing and implementing, a worldwide mobile application development contest to encourage member and industry engagement."

- **The Entrepreneur of the Week by IEEE Entrepreneurship and IEEE N3XT Events – February 2017**

"Founder of IEEEemacC, Assistant Professor at the University of Osijek, Croatia, & active IEEE volunteer— Josip Balen is the Entrepreneur of the Week!"

- **Samsung Gear S2 App Contest – 2<sup>nd</sup> place – June 2016**

Award was given for the "5minutes" Tizen application for the Samsung Gear S2 smart watch.

- **The Darrel Chong Student Activity Award – January 2015**

"The purpose of this recognition system serves to change the mindset of our student groups from being number-driven to becoming value-driven and to acknowledge exemplary student activities around the world."

- **IEEE Croatia Section exceptional contribution award – December 2014**

"The award for exceptional contribution to the IEEE Croatia Section was presented to Mr. Josip Balen, for the significant contribution over many years to to promotion, success and international visibility of student activities of the IEEE Croatia Section"

- **IEEE Larry K. Wilson Regional Student Activities Award – August 2014**

"The purpose of this award is to recognize, annually, in each Region of the IEEE, the Student member most responsible for an extraordinary accomplishment associated with Student Activities"

**• IEEE Computer Society Richard E. Merwin Award – December 2013**

“For demonstrating outstanding involvement in an IEEE Computer Society Student Chapter, excellence in academic achievement and promise in future efforts”

**• IEEE Student Enterprise Award - September 2013**

Received for the IEEEemadC project

**• The IEEE Regional Exemplary Student Branch Award - July 2013**

Under my leadership IEEE Student Branch Osijek won this award

**• IEEE Computer Society Richard E. Merwin Award – July 2012****RESEARCH AND TEACHING  
MOBILITY**

- 
- Erasmus+ Research Mobility - Vesalius College, **Vrije Universiteit Brussel**, Belgium, 28<sup>th</sup> August – 14<sup>th</sup> September 2019  
Research: EU founding opportunities, project writing and application process
  - Erasmus+ Research Mobility - Department of Networked Systems and Services, **Budapest University of Technology and Economics**, Hungary, 22nd June – 7th July 2017.  
Research: A platform for real-world experiment of VANET applications and protocols based on smartphones
  - Erasmus+ Teaching Mobility: **University of Twente**, The Netherlands, Department of Computer Science, Pervasive Systems Group, prof. Paul Havinga, November 2016.  
Teaching: Cyber-Physical Systems, Sensor and actuator systems, LoRa Network
  - Erasmus+ Research Mobility - Department of Computer Science, **Katholieke Universiteit Leuven**, Belgium, 1 – 31 July 2015  
Research: A delay tolerant data dissemination (geo-based) algorithm for VANETs
  - Erasmus+ Research Mobility, Distributed Embedded Systems Group, Department of Computer Science, **University of Paderborn**, Germany, 31 January – 31 March 2015  
Research: Spatio-temporal distributed background data storage and management system in VANETs
  - Erasmus Research Mobility - Department of Computer Science, **Katholieke Universiteit Leuven**, Belgium, 2 September - 2 October 2013  
Research: Implementation of efficient communication algorithms in VANETs
  - Erasmus Teaching mobility, Department of Computer Science, **Katholieke Universiteit Leuven**, Belgium, 9 April - 10 May 2013  
Real-time programming, exercises with students
  - Erasmus Research Mobility - Department of Computer Science, **Katholieke Universiteit Leuven**, Belgium, 9 November - 21 December 2011  
Research: Introduction to VANETs

**INVITED TALKS AT  
CONGRESSES AND  
CONFERENCES**

- 
- **IEEE Education Week**, Webinar on Richard E. Merwin Scholarship: A Springboard to Success, virtual, April 2022
  - **International Conference** on Computational Science and Computational Intelligence (CSCI 2021) Las Vegas, SAD, December 2021, presentation of one research paper
  - **IEEE Rising Stars Conference**, virtual, “IEEEemadC – Mobile Application Development Contest”, invited talk, 2.-4. January 2021.
  - **OTO 2020**: International Scientific Conference 'Organization and Maintenance Technology, Osijek, Croatia, December 12, 2020, presentation of one research paper
  - **International Conference** on Smart Systems and Technologies 2020 (**SST 2020**), 2020, Osijek, Croatia, 14 - 16 October 2020, sponsored by IEEE, presentation of three research papers
  - **IEEE Region 8** Central European Student and Young Professional Congress, Faculty of Technical

- Sciences (FTN), Novi Sad, Serbia, „Mobile Application Development“, invited talk, 2.- 4. July 2019.
- **IEEE Student and Young Professional Congress**, Panevropski univerzitet Apeiron, Banja Luka, Bosna i Hercegovina, “IEEE - The global home of engineers”, invited talk, 29. November – 1. December 2019.
  - IEEEmadC F2F meeting, **Dubai, UAE**, 7<sup>th</sup> – 12<sup>th</sup> November 2018
  - IEEE Region 8 Student and Young Professional Congress Sarajevo 2018, **Sarajevo, Bosnia and Herzegovina**, invited talk, 30<sup>th</sup> November – 2nd December 2018
  - Round Table “Development of University-based Innovation and Entrepreneurship Ecosystem in Bosnia and Herzegovina”, **Jahorina, Sarajevo, Bosnia and Herzegovina**, invited talk, 22-23rd November 2017
  - IEEE International Conference on Smart Systems and Technologies (SST 2017), Osijek, Croatia, 18 - 20 October 2017, sponsored by IEEE, presentation of one research paper
  - IEEE Region 8 Student and Young Professional Congress Sarajevo 2016, **Sarajevo, Bosnia and Herzegovina**, 1-4 of December 2016
  - IEEE Region 8 Student and Young Professional Congress 2016 **Regensburg, Germany, OTH University**, 17-21 August 2016
  - IEEE Teacher In-Service Program (TISP) Training Workshop, **Athens, Greece**, 5-6 of December 2015
  - 3rd GI/ITG KuVS Fachgespräch Inter-Vehicle Communication, **Ulm, Germany**, 19 - 20 March 2015
  - IEEE Region 8 Student and Young Professional Congress 2014, **AGH University of Science and Technology, Kraków, Poland**, 6 - 10 August 2014
  - 33rd Conference on Transportation Systems with International Participation - Automation in Transport 2013, Zagreb, KoREMA, 2013., presentation of one research paper
  - **CERN**, short professional visit, Geneva, Switzerland, 30 May - 3 June 2013
  - International Congress on Ultra Modern Telecommunications and Control Systems and Workshops (ICUMT 2012), **Saint Petersburg, Russia**, 3 - 5 October 2012
  - IEEE Region 8 Student Branch and GOLD Congress, **Technical University of Madrid, Spain**, 25 – 29 July 2012
  - 35th International Convention on Information, Communication and Electronic Technology - **MIPRO 2012**, Opatija, Croatia 21 - 25 May 2010, presentation of one research paper
  - 33rd International Convention on Information, Communication and Electronic Technology - **MIPRO 2010**, Opatija, Croatia 24 - 28 May 2010, presentation of one research paper
  - **CERN**, short professional visit, Geneva, Switzerland, 30 May - 3 June 2012
  - IEEE Region 8 Central European Student Branch Congress, **Johannes Kepler University, Linz, Austria**, 13 - 15 May 2011
  - IEEE Region 8 Student Branch and GOLD Congress, **KU Leuven, Belgium**, 4 - 8 August 2010
  - Mälardalen University, Mälardalen Real-Time Research Centre (MRTC), **Västerås, Sweden**, Tempus project, 18 – 23 August 2009

## PROJECTS

- **Research and development of autonomous robotic fire extinguisher for prevention, early detection and fire extinguishing**, Project reference: KK.01.2.1.02.0014, European Regional Development Fund, Operational Program: Competitiveness and Cohesion 2014-2020, FERIT, Pastor TVA d.d. and Capital Hook j.d.o.o., 2020 - 2023
  - **Project leader** - August 2020 – present
- **IoT-field: An Ecosystem of Networked Devices and Services for IoT Solutions Applied in Agriculture**, "Investing in Science and Innovation - First Call" Call Reference: KK.01.1.1.04", financed from the European Regional Development Fund (ERDF), FER, FERIT and the Agricultural Institute Osijek, March 2020 – present
  - **Researcher and project collaborator** – March 2020 - present
- **IEEEmadC** – Global Mobile Application Development Contest for IEEE student members (project no. #2013-039FGF) – [www.ieeemadc.org](http://www.ieeemadc.org)
  - **Project Founder** – September 2013 - present
- **Virtual reality** – project with students which resulted with resulted with FERIT Simulator application for the HTC Vive VR platform. FERIT Simulator is **the first application in the world** that displays the University physical space in VR available for the HTC Vive devices.
  - **Project idea and project leader** – March 2017
- **Samsung Gear S2 smart watch application** - project with students which resulted with “5minutes”

Tizen application and award from Samsung - <https://www.5minutes.link/>

- **Project idea and project leader** – June 2016
- **European Union IPA4** project "In pace with global trends to support active labour market policy" (project no. EuropeAid/131871/M/ACT/HR; 94.391,12 EUR) - <http://edumobi.etfos.hr/lng/en-US>
  - **Expert for developing teaching and learning materials** - September 2012.-September 2013
- **TEMPUS Joint European Project** "*Colaborative internationalization of software engineers in Croatia*" (project no. JEP-41023-2006)
  - **Research assistant** – December 2008 – December 2009
- **Ministry of Science, Education and Sports (Republic of Croatia)**, "Scheduling in autonomic distributed computer systems" (project no. 165-0362980-2002)
  - **Research assistant**, 2008 - 2013
- **Development of mobile applications** for Android, iOS, WP and Symbian platform for the Faculty of Electrical Engineering in Osijek". ETF was **the first institution in the world** that had its own application developed for four different platforms - <http://www.etfos.unios.hr/?mobi>
  - **Project idea and project leader** - June - December 2011.

## IEEE ACTIVITIES

- Organization of more than 50 lectures, workshops or contents for students
- Organization of several congresses for student and YP from Croatia
- Participation in several IEEE Student Branch Region 8 Congresses
- Publication of several articles in IEEE resources
- Development of SB web page, Facebook Community, brochures, IEEE SB Osijek radio show, etc.

## RESEARCH AND PUBLICATIONS

At the end of my undergraduate studies (in 2007) I published the book [1] "Fundamentals of Office Informatics" that was during the last five years sold in the more than 2000 copies. Since during the last two years of my college I was working in the Private School in Informatics, the book emerged as a result of my work experience. Furthermore, the book is still used in several Private Schools of Informatics on Basic informatics courses.

[1] J. Balen, "Fundamentals of Office Informatics", Đakovo, Memoria d.o.o., 1, 114, 2007

Since 2009 I published three journal papers and eight conference papers. Furthermore, I was mentor on seminar paper written with students that won the Rector's Award on J. J. Strossmayer University of Osijek for the 2012 year. Last but not the least, I was co-mentoring more than 10 graduate thesis (baccalaureus and pre-Bologna). List of all my publications can be found in Croatian scientific bibliography on the following web address:

<http://bib.irb.hr/lista-radova?autor=311222&lang=EN>

or Google Scholar:

<http://scholar.google.com/citations?user=gD4Y1bEAAAAJ&hl=en>

Since my research is very wide, I categorized my papers into four different fields: VANETs (primary research field), Operating Systems (benchmarking and performance evaluation), Wireless Sensor Networks (performance evaluation, patents and QoS) and Other papers (work with students and extracurricular activities).

### FIELD 1: VANETs (communication protocols V2V, V2I, DTN, parked vehicles, mobile apps in VANETs)

This is my primary research field and I am working in the field of VANETs since December 2011. Together with the colleagues from the KU Leuven I am researching the problems in VANETs communication optimization by using the V2V, V2I and DNT communication models. In the paper [3] we propose the new approach for improving the communication in VANETs in the specific scenarios by using parked vehicles. In the paper [4] we describe a data dissemination architecture in VANETs that combines DTN, V2V and V2I communication models.

[2] A. Burusic, J. Balen and K. Semialjac, "Review and Analysis of Bio-Inspired Routing Protocols in VANETs", International Conference on Smart Systems and Technologies 2020 (SST 2020), 2020, Osijek, Croatia, pp. 45-50

[3] J. Balen, S. Ljepic, K. Lenac, S. Mandzuka, „Air Quality Monitoring Device for Vehicular Ad Hoc Networks: EnvioDev“, International Journal of Advanced Computer Science and Applications



(IJACSA), 11, 5, 2020., pp. 580-590.

[4] J. Videković, J. Balen, On-board smartphone application platform for real-time sharing of traffic information, Proceedings of 37th Conference on Transportation Systems with International Participation - Automation in Transport 2017, Zagreb, KoREMA, 2017. pp. 27-31.

[5] J. Balen, D. Jakovljević, K. Vidović, Integration of Traffic and Travel Data Exchange in Command and Control Platform, International Conference on Smart Systems and Technologies (SST 2016), October 12-14, 2016, Osijek, Croatia, pp. 281-286.

[6] J. Balen, Spatio-temporal distributed background data storage and management system in VANETs, 3rd GI/ITG KuVS Fachgespräch Inter-Vehicle Communication, March 19-20, Ulm, Germany

[7] J. Balen, K. Paridel, G. Martinović, Y. Berbers, „PVCM: Assisting multi-hop communication in vehicular networks using parked vehicles“, International Congress on Ultra Modern Telecommunications and Control Systems (ICUMT), Sankt Petersburg, Russia, 2012, pp. 1-4.

[8] K. Paridel, J. Balen, Y. Berbers, G. Martinović, „VVID: A delay tolerant data dissemination architecture for VANETs using V2V and V2I communication“, The Second International Conference on Mobile Services, Resources, and Users, MOBILITY 2012, Venice, Italy, 2012, pp. 1-5

[9] J. Balen, J. Matijaš, G. Martinović, "Simulation and testing of VANET protocols", Proceedings of 33rd Conference on Transportation Systems with International Participation - Automation in Transport 2013, Zagreb, KoREMA, 2013. pp. 5-8

### FIELD 2: Operating Systems (benchmarking and performance evaluation)

Since my undergraduate studies I have been interested in the field of Operating Systems (OSs) performance evaluation. My first research in this field started on my pre-Bologna undergraduate studies where I experimented with performances of different OSs and wrote diploma thesis on this subject. My mentor was and still is Dr. Goran Martinović, Associate Professor. In the paper [5] we evaluated performance of virtual OSs on three different host OSs and in the paper [6] we benchmarked network performance of latest Windows OSs. In the paper [7] we provided exhaustive performance testing and evaluation of three latest versions of the Windows OS. I presented the papers [5] and [6] on the IEEE Conferences Mipro 2010 and 2012. The result of my work in this area is the paper [7] published in CC journal with the Impact Factor 0.788.

[10] M. Boras, J. Balen and K. Vdovjak, "Performance Evaluation of Linux Operating Systems", International Conference on Smart Systems and Technologies 2020 (SST 2020), 2020, Osijek, Croatia, pp. 115-120

[11] K. Vdovjak, J. Balen, K. Nenadic, „Experimental Evaluation of Desktop Operating Systems Networking Performance“, International journal of electrical and computer engineering systems, 12, 2, 2020., pp. 67-76.

[12] J. Balen, K. Vdovjak, G. Martinovic, Performance Evaluation of Windows Virtual Machines on a Linux Host, Automatika, 61, 3, 2020., pp. 425-435.

[13] J. Balen, D. Vajak, K. Salah, Comparative Performance Evaluation of Popular Virtual Private Servers, Journal of Internet Technology (JIT), accepted for publication, 2020

[14] J. Balen, G. Martinovic, S. Rimac-Drlje, "Impact of the Host Operating Systems on Virtual 2Machine Performance", Proceedings of MIPRO 2010, 33rd International Convention, Vol. III., CTS & CIS, Opatija, Croatia, 2010, pp. 47-52 (IEEE Conference)

[15] J. Balen, G. Martinović, Ž. Hocenski, „Network Performance Evaluation of Latest Windows Operating Systems“, Proceedings of the 20th International Conference on Software, Telecommunications and Computer Networks, Split, Croatia, 2012, pp. 1-6

[16] G. Martinovic, J. Balen, B. Cukic, "Performance Evaluation of Recent Windows Operating Systems", Journal of Universal Computer Science, 18, 2, 2012, pp. 218-263 (Impact Factor 0.788)

### FIELD 3: IoT and Wireless Sensor Networks (performance evaluation and QoS)

I have been interested in the field of WSNs (Wireless Sensor Networks) from 2009 till 2011 year. After I started my PhD study I noticed that WSNs are developing rapidly and becoming the primary research field of many scientists. Due to the versatile usages such as environment observation, vehicle traffic monitoring, habitat monitoring, industrial automation, health applications, etc., I started to research patents, performance and QoS of various protocols and routing algorithms. In the paper [8] we surveyed cross-layer approach for improving performances and energy preservation and noticed that universal systematic methodology for the performance evaluation does not exist. Therefore, we proposed performance evaluation metrics. Paper [9] continues my work presented in the previous paper. Paper [10] is exhaustive survey on QoS in WSNs and patents from this area. It is result of my long research of various State-of-the-art papers on QoS provisioning in WSNs.

[17] A. Pejković, J. Spišić, M. Zmić, K. Grgić, J. Balen, Wireless technologies of wide and open areas, OTO 2020: International Scientific Conference 'Organization and Maintenance Technology, Osijek, Croatia, December 12, 2020

[18] K. Grgic, D. Zagar, J. Balen and J. Vlaovic, "Internet of Things in Smart Agriculture - Possibilities

and Challenges”, International Conference on Smart Systems and Technologies 2020 (SST 2020), 2020, Osijek, Croatia, pp. 239-244

**[19]** J. Vlaović, J. Balen, K. Grgić, D. Žagar, V. Galić and D. Šimić, “An Overview of Chlorophyll Fluorescence Measurement Process and Methods”, International Conference on Smart Systems and Technologies 2020 (SST 2020), 2020, Osijek, Croatia, pp. 245-250

**[20]** G. Martinovic, J. Balen, D. Zagar, “A Cross-Layer Approach and Performance Benchmarking in Wireless Sensor Networks”, Proceedings of 2nd WSEAS International Conference on SENSORS and SIGNALS, Baltimore, USA, 2009, pp. 76-81

**[21]** G. Martinovic, J. Balen, D. Zagar, “Performance Evaluation Model of Optimization Methods for Wireless Sensor Networks”, WSEAS Transactions on Communications, 10, 8, 2009, pp. 1196-1105

**[22]** J. Balen, D. Zagar, G. Martinovic, “Quality of Service in Wireless Sensor Networks: A Survey and Related Patents”, Recent Patents on Computer Science, 4, 3, 2011, pp. 188-202

#### FIELD 4: Other papers

As a result of my constantly students encouragement to become more professional and to be closer to the science by motivating them to write scientific papers, papers [11] and [12] emerged. Both papers are result of my collaboration with the student Luka Horvat (Graduate study programme in Computer Engineering, 2nd year). Furthermore, in 2011 I started Mobile applications development project for the Faculty of Electrical Engineering. As a result, five students (four developers and one designer) developed mobile applications for the following platforms: Symbian, Android, iOS and Windows Phone. I was their mentor and team leader. After finishing applications, we wrote a seminar paper [13] that won the Rector’s Award on the J. J. Strossmayer University of Osijek for 2012 year.

**[23]** S. Dubovicki, J. Balen, Influence of New Technologies on Content Adoption, Motivation and Satisfaction, Didactica Slovenica - Pedagoška obzorja. 33, 2, 2018, pp. 156-173.

**[24]** M. Šipoš, J. Balen, A survey of e-learning usage in a three-dimensional virtual environment Second Life, International Conference on Smart Systems and Technologies 2017 (SST 2017), 2017, Osijek, Croatia, pp. 293-298.

**[25]** G. Martinovic, L. Horvat, J. Balen, “Stochastic Approach on Hash Cracking”, Proceedings of MIPRO 2012, 35th International Convention on Computers in Technical Systems (CTS), Opatija, Croatia, 2012, pp. 1028-1032.

**[26]** L. Horvat, J. Balen, G. Martinovic, “Proposal of mLearning system for written exams”, Proceedings of the 54th International Symposium ELMAR, Zadar, Croatia, 2012, pp. 345-348.

**[27]** D. Balen, I. Bedek, L. Horvat, J. Sokcevic, V. Vucetic, “Mobile applications of Faculty of Electrical Engineering on J. J. Strossmayer University of Osijek”, Seminar paper, 54 pages, Chancellor’s Award on the J. J. Strossmayer University of Osijek, 2012

#### REVIEWS AND CONFERENCE POSITIONS

- Reviewer for the International Journal of Electrical and Computer Engineering Systems (IJECEs), ISSN 1847-6996, Emerging Sources Citation Index (ESCI - Clarivate Analytics), January 2021,
- Scientific Committee Member, OTO 2020: International Scientific Conference ‘Organization and Maintenance Technology, Osijek, Croatia, December 12, 2020
- Reviewer for IEEE International Conference on Smart Systems and Technologies (SST 2020), Osijek, Croatia, 14 - 16 October 2020, sponsored by IEEE
- Reviewer for Journal of Communications Software and Systems (JCOMSS), ISSN 1845-6421, Emerging Sources Citation Index (ESCI - Clarivate Analytics), July 2018 and March 2020.
- Reviewer for International Journal of Biometrics, Scopus, Compendex, Emerging Sources Citation Index (ESCI - Clarivate Analytics), Academic OneFile (Gale), ACM Digital Library, 2020.
- Reviewer for Automatika: Journal for Control, Measurement, Electronics, Computing and Communications, ISSN 0005-1144, Science Citation Index Expanded (SCIE - Clarivate Analytics) October 2018
- Publicity/Web Chair of IEEE International Conference on Smart Systems and Technologies (SST 2018), Osijek, Croatia, 10 - 12 October 2018, sponsored by IEEE
- Reviewer for IEEE International Conference on Smart Systems and Technologies (SST 2017), Osijek, Croatia, 10 - 12 October 2018, sponsored by IEEE
- Publicity/Web Chair of IEEE International Conference on Smart Systems and Technologies (SST 2017), Osijek, Croatia, 18 - 20 October 2017, sponsored by IEEE
- Reviewer for IEEE International Conference on Smart Systems and Technologies (SST 2017), Osijek, Croatia, 18 - 20 October 2017, sponsored by IEEE
- Publicity/Web Chair of IEEE International Conference on Smart Systems and Technologies (SST 2016), Osijek, Croatia, 12 - 14 October 2016, sponsored by IEEE
- Reviewer for IEEE International Conference on Smart Systems and Technologies (SST 2016),

Osijek, Croatia, 12 - 14 October 2016, sponsored by IEEE

- Reviewer for The Networks and Communications Track at the Winter Simulation Conference (WSC) 2015, Huntington Beach, California, 6-9 December 2015, sponsored by ACM/SIGSIM, ASA, ASIM, IEEE/SMC, IIE, INFORMS-SIM, NIST, SCS
- Reviewer for The Short Paper and Poster Track at The 8th International Conference on Intelligent Environments, Ciy of Guanajuato, México, 26-29 June 2012, sponsored by IEEE