

# Jovan Karamacoski

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Born: 13 May 1985

Citizenship : Macedonian



## Summary

Experienced in network management with extended knowledge of deployment and management of wireless networks. Main technology of interest were wireless technologies like WiMAX and WiFi, but also the wired technologies (DOCSIS, HFC, FTTH, PON). Currently the focus is on the most recent wireless technologies like 5G and LoRa. Main on-site experience is installation of WiMAX base stations, site planning, test drives, and optimizing of WiMAX network, providing second line technical support and troubleshooting, link-budget planning and installing wireless PtP professional links, monitoring, problem analyzing and solving problems for PtP links, structural cabling, cable management and cable preparation, splicing and termination of fiber cables, managing cable TV DOCSIS network and DVB-C decoders and multiplexers. During my professional engagement in the companies, gained programming skills in several programming languages. Also engaged in teaching activities since 2014 in university environment with additional research expertise. Participated in projects for development computer vision algorithm for counting people, power line communications noise modelling, LDPC code performance evaluation for power line communications, application for certificate storage on a Blockchain, developing platform for online studying, etc. The PhD studies were related to the Blockchain topic, more precisely related to design of Public Healthcare system based on Blockchain technology and it includes in-depth analysis of privacy concerns, security, digital identity, consensus optimization and Blockchain stress testing (an emulation of a Blockchain network is developed to test the Blockchain feasibility with the challenges of the Public Healthcare system). Currently working in the field of physical layer security, more precisely friendly jamming technique.

## Professional experience

- 11.2022-present Assistant Professor in University of Information Science and Technology "St. Paul the Apostle" - Ohrid, Macedonia**
- Conducting teaching activities for subjects (Network security architecture, Wireless sensor networks, Wireless networks, Wireless technologies, Information theory, Internet technologies, Network architectures, Client and server systems, Computer networks, Communication protocols, Game theory, Optimization theory, Web design, Artificial Intelligence, Image and signal processing, Systems theory)
  - Working on a several Blockchain development projects (Publications of graduation certificates on a Blockchain, Storing sensor data on IPFS, Developing Ethereum tokens)
- 08.2014-11.2022 Teaching Assistant Researcher and Consultant in University of Information Science and Technology "St. Paul the Apostle" - Ohrid, Macedonia**
- Conducting teaching activities for subjects (Network security architecture, Wireless sensor networks, Wireless networks, Wireless technologies, Information theory, Internet technologies, Network architectures, Client and server systems, Computer networks, Communication protocols, Game theory, Optimization theory, Web design, Artificial Intelligence, Image and signal processing, Systems theory)
  - Working on a Computer Vision project by use of OpenCV (Counting people on a video record)
  - Working on a project regarding Distributed Storage systems (Performance maximization of Reconfigurable codes)
  - Working on a several Blockchain development projects (Publications of graduation certificates on a Blockchain, Storing sensor data on IPFS, Developing Ethereum tokens)
- 07.2013-07.2014 Manager of Access CATV network and Head-end CATV assistant in Infel Ohrid, Macedonia**
- Managing backbone network (Cisco switches and Mikrotik router)
  - Managing DOCSIS network (Analog TV, Digital TV and Internet access)
  - Managing Casa CMTS and DVB-C compliant WISI Chameleon decoder and multiplexer
- 02.2009-12.2011 Engineer for backbone and access networks in Neotel ISP Skopje, Macedonia**
- Installation of SOHO LAN (copper and fiber), structural cabling, cable management and cable preparation, splicing and termination of fiber cables

- Configuration of networking equipment (ZTE and Cisco switches)
- Configuration and installation of user equipment, office testing and equipment acceptance
- End user equipment checking and refurbishing
- On-site installation of Alvarion WiMAX base stations, site planning, equipment testing and technical acceptance of base stations
- Drive test, log analysis and optimization of WiMAX network using Alvarion software
- Provided second line technical support and troubleshooting of control-plane signaling and data traffic using Wireshark
- Link-budget planning and installing wireless Alvarion and Ceragon PtP links
- Troubleshooting, monitoring, problem analyzing and solving issues for PtP links

## Education

2014 – 2022	<b>University “Ss. Cyril &amp; Methodius” – Skopje, Macedonia, Faculty of Electrical Engineering and Information Technologies</b> Ph.D. student in Electrical engineering and information technology Doctoral thesis: Optimization of a public healthcare system based on Blockchain technology
2009 – 2012	<b>University “Ss. Cyril &amp; Methodius” – Skopje, Macedonia, Faculty of Electrical Engineering and Information Technologies</b> M.Sc. – Wireless and mobile communications Master thesis: "Methods for evaluation of TVWS and its re-usage"
2004 – 2008	<b>University “Ss. Cyril &amp; Methodius” – Skopje, Macedonia, Faculty of Electrical Engineering and Information Technologies</b> Dipl. Ing. – Telecommunications Bachelor thesis: "Cognition in Radio Resource Management"

## Project participation

2016	Macedonian - Chinese Scientific and Technological Cooperation, bilateral project, project name: Secure Distributed Storage
2016	ERASMUM+ Program project, project name: Innovative postgraduate programme: Addressing market needs and pioneering new deliverer modes
2012	European Framework program 7 (FP7-ICT), QUASAR (Quantitative Assessment of Secondary Spectrum Access)

## Skills & Expertise

<b>Packet analyzer</b>	Wireshark
<b>Programming</b>	C/C++/Visual C++, JavaScript, HTML, Python, Solidity
<b>Database</b>	MongoDB
<b>R&amp;D tools</b>	Matlab, ns3
<b>Miscellaneous</b>	OpenCV, AutoCAD and 3D STUDIO MAX

## Languages

<b>English</b>	Full professional proficiency (TOEFL Total 94 (Reading 27, Listening 25, Speaking 20, Writing 22))
<b>Macedonian</b>	Native

## Publications

2022	J. Karamachoski and L. Gavrilovska, "Design of the functional entities of the BloHeS system," Journal of Electrical Engineering and Information Technologies, vol. 7, no. 1, 2022.
2022	J. Karamachoski and L. Gavrilovska, "BloHeS Consensus Mechanism – Introduction and Performance Evaluation," in International Conference on Future Access Enablers of Ubiquitous and Intelligent Infrastructures (FABULOUS), Zagreb, Croatia, May 2022

- 2022 J. Karamachoski and L. Gavrilovska, "BloHeS Island Management Protocol," in International Conference on Information Society and Technology, Kopaonik, Serbia, March 2022
- 2021 J. Karamachoski and L. Gavrilovska, "Tendermint Performance with Large Transactions: The Healthcare System Scenario," in International Balkan Conference on Communications and Networking (BalkanCom), Novi Sad, Serbia, September 2021, pp. 85–89.
- 2021 J. Karamachoski and L. Gavrilovska, "Extended Performance Evaluation of the Tendermint Protocol," in ETAI 2021 Conference Proceedings, Online conference, 2021, vol. 2, pp. 231–236.
- 2021 J. Kanevche, J. Karamachoski, M. Puncheva i N. Marina, "Trading Application Based on Blockchain Technology", Tehnički glasnik, vol.15, br. 2, str. 282-286, 2021.
- 2020 Jovan Karamachoski, Liljana Gavrilovska, "An Optimal Storage Organization for Blockchain-Based Public Healthcare System", Journal of Electrical Engineering and Information Technologies, Skopje, Republic of Macedonia, Vol 5, No 2, 2020
- 2020 Jovan Karamachoski, Ninoslav Marina, Pavel Taskov, "Blockchain-Based Application for Certification Management", MOTSP, Bol, Brach, Croatia, September 30 – October 2, 2020 (Online)
- 2019 Jovan Karamachoski, "The end of the Blockchain as we know it", ACT2019, Varna, Bulgaria, September 19-21, 2019
- 2019 Jovan Karamachoski, Liljana Gavrilovska, "Toward scalable architecture for the next generation Blockchain based Healthcare systems", BALKANCOM, Skopje, Republic of Macedonia, June 10-12, 2019
- 2019 Jovan Karamacoski, Natasa Paunkoska, Ninoslav Marina, Magdalena Puceva, "Blockchain for Reliable and Secure Distributed Communication Channel", IAICT, Bali, Indonesia, July 1-3, 2019
- 2019 Valentin Rakovic, Jovan Karamachoski, Vladimir Atanasovski, Liljana Gavrilovska, "Blockchain paradigm and Internet of Things", Wireless Personal Communications, Springer, 2019
- 2019 Jovan Karamachoski, Liljana Gavrilovska, "Framework for Next Generation of Digital Healthcare Systems", Future Access Enablers for Ubiquitous and Intelligent Infrastructures, FABULOUS 2019, Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol 283. Springer, Cham
- 2018 Anis Sefidanoski, Tanja Kaurin, Jovan Karamachoski, Borko Hristov, "AI for semi-structured and unstructured data", International Journal for Science and Arts, Skopje, Republic of Macedonia, 2018
- 2018 Konstantin Martinov, Miroslav Kotevski, Jovan Karamachoski, "Evolution to 5G and compliance to EMF exposure standards", ETAI, Struga, Republic of Macedonia, September 20-22, 2018
- 2018 Jovan Karamachoski, Liljana Gavrilovska, Anis Sefidanoski, "The fusion between Blockchain and IoT for healthcare systems", ETAI, Struga, Republic of Macedonia, September 20-22, 2018
- 2017 Natasa Paunkoska, Ninoslav Marina, Weiler Finamore, Jovan Karamachoski, "Secure Shortened MSR Codes", IWCMC, Valencia, Spain, June 26-30, 2017
- 2017 Victor Fernandes, Weiler A. Finamore, Moises V. Ribeiro, Ninoslav Marina, Jovan Karamachoski, "Bernoulli-Gaussian Distribution with Memory as a Model for Power Line Communication Noise", SBrT2017, Sao Pedro, Brazil, September 3-6, 2017
- 2016 N. Paunkoska, W. Finamore, J. Karamacoski, M. Puceva, N. Marina, "Improving DSS Efficiency with Shortened MSR Codes", 8th International Congress on Ultra Modern Telecommunications and Control Systems and Workshops (ICUMT), Lisbon, Portugal, October 18-20, 2016
- 2012 P. Latkoski, L. Gavrilovska, J. Karamacoski, B. Jankuloska, M. Zahariev, "Quantitative Case Study of Wi-Fi-like Deployment in TVWS and ATC Radar Bands", The 3rd Workshop of COST Action IC0902, Ohrid, Macedonia, September 12–14, 2012

- 2012 Pero Latkoski, Bisera Jankuloska, Milan Zahariev, Jovan Karamacoski, Liljana Gavrilovska, "Opportunistic Usage of TV Band for Multiple Secondary WLAN Users", CAMAD 2012, Barcelona, Spain, September 2012
- 2012 Pero Latkoski, Jovan Karamacoski, Liljana Gavrilovska, "Indoor Broadband Use of 2.7-2.9 GHz Radar Spectrum: Case of Macedonia", WPMC 2012, Taipei, Taiwan, September 2012
- 2012 Pero Latkoski, Jovan Karamacoski, Liljana Gavrilovska, "Availability assessment of TVWS for Wi-Fi-like secondary system: A case study", CROWNCOM 2012, Stockholm, Sweden, June 2012
- 2012 Jovan Karamacoski, Pero Latkoski, Liljana Gavrilovska, "On Estimation Aspects of WLAN Secondary Spectrum Availability in ATC Radar Band", EW 2012, Poznan, Poland, April 2012
- 2011 M. Zahariev, B. Jankuloska, J. Karamacoski, E. Petkovska, L. Gavrilovska, "Energy efficiency analysis in heterogeneous networks deployment", Telfor, Belgrade, Serbia, 2011
- 2011 Jovan Karamacoski, Marko Porjazoski, Pero Latkoski, Borislav Popovski, Trajce Čerepnalkovski, "Using WiMAX Wireless Technology in automated smart metering", Mako-Cigre 2011, Ohrid, Republic of Macedonia, October 2011

## Interest

Wireless, cognitive and sensor networks  
IoT and Blockchain