

# Iulia-Maria Florea

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## PROFESSIONAL EXPERIENCE

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OCTOBER 2019 – PRESENT **ENEA SERVICES ROMANIA**

**Software Developer for Voice over IP project**

C programming for Voice over IP protocols: experience with multiple protocols, such as SIP, Diameter, ISDN; bug fixing in C projects, continuous integration with Jenkins

Skills: C, programming on Linux user space, multi thread programming, Jenkins, bash scripting, Git, Python scripting for traffic generation

October 2016 – PRESENT **FACULTY OF AUTOMATIC CONTROL AND COMPUTER SCIENCE, UNIVERSITY POLITEHNICA OF BUCHAREST**

**Doctoral researcher (PhD student) in Security in Emerging Technologies**

Building a searchable encryption algorithm, with focus on database security applications, optimizing and further enhancing existing solutions for matching and decrypting IP addresses. For this project, I use C and open source libraries for cryptography

Building a „smart” search engine based on Big Data from solar observations and renewable energy, in order to return the entries based on their relevance related to the query. For this project, I used machine learning libraries in Python

Adding security to existing application protocols in Internet of Things

APRIL 2017 – JUNE 2019 **ENEA SERVICES ROMANIA**

**Networking Software Developer**

C programming for OpenFastPath project: building a scalable network stack in user space, over OpenDataPlane and DPDK, experience on handling packets, IP and IPv6, subinterfaces, static routing implementation, TCP and UDP protocols, data structures for fast searching, synchronization mechanism in Linux

C programming on a RTOS Networking stack,

Skills: C, Jenkins, bash scripting, Git, open source networking software, TCL/Expect scripting

OCTOBER 2013 – PRESENT **UNIVERSITY POLITEHNICA OF BUCHAREST**

**Associate Teaching Assistant**

Associate teaching assistant for Privacy Enhancing Technologies (2018-2019), Network Design, and Local Networks

I am in charge of hands-on training and exercises for labs, exam subjects, task proposals, grading, preparing courses and presentations for bachelor and master degree students

JUNE 2019 – OCTOBER 2019 **MINES PARISTECH SOPHIA ANTIPOLIS**

**Research Intern**

Building a „smart” search engine based on Big Data from solar observations and renewable energy, in order to return the entries based on their relevance related to the query. I have built a mathematical model for short technical text similarity, using Word2Vec library, that transforms words into multi-dimensional vectors and Machine Learning libraries for text similarity.

Skills: Python, Machine Learning libraries in Python, Natural Language Processing algorithms, Jupyter Notebook

**JULY 2013 – APRIL 2016 LUXOFT ROMANIA**

**Embedded Software Developer for Network Devices**

C programming on network devices, adding IPv6 protocols on layer 3 switches, user level programming on VxWorks

System administration (basic)

Skills: C, VxWorks, ClearCase versioning system, bash scripting, PHP

**FEBRUARY 2013 – JULY 2013 TEAMNET**

**Bachelor Intern in “Opinion Mining and Big Data”**

Work on a research project that I developed in my Bachelor thesis, a syntactic parser for Romanian language, based on rules on other Latin languages. My purpose has been to programmatically obtain connections between words in sentences.

Skills: Java, machine learning algorithms

## **EDUCATION**

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October 2013 – July 2015 **FACULTY OF AUTOMATIC CONTROL AND COMPUTER SCIENCE**

**Master Degree in Network Security**

Network security

Wireless networks

Linux administration

The final thesis has proposed an efficient solution for modifying the parameters of network protocols, using a genetic algorithm, based on the latency of the links

October 2009 – July 2013 **FACULTY OF AUTOMATIC CONTROL AND COMPUTER SCIENCE**

**Bachelor Degree in Computer Science**

Object Oriented Programming

Operating Systems

Communication Protocols

Local area networks

Parallel programming

## **SKILLS**

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January 2016 CISCO CCNP Route (642-902)

English: Advanced (C1)

French: Intermediate level

Social skills: Team work, public presentations, volunteer educational work with children, determination

## PAPERS

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Vaduva, J. A., Dascalu, S., **Florea**, I. M., Culic, I., & Rughinis, R. (2019, May). Observations over SPROBES Mechanism on the TrustZone Architecture. In *2019 22nd International Conference on Control Systems and Computer Science (CSCS)* (pp. 317-322). IEEE.

Văduva, J. A., CHIȘCARIU, R. E., Culic, I., **Florea**, I. M., & RUGHINIȘ, R. (2019). ADREM: System Call Based Intrusion Detection Framework. *eLearning & Software for Education*, 1.

Vaduva, J. A., Dascalu, S., **Florea**, I. M., Culic, I., & Rughinis, R. (2019, May). Observations over SPROBES Mechanism on the TrustZone Architecture. In *2019 22nd International Conference on Control Systems and Computer Science (CSCS)* (pp. 317-322). IEEE.

**Florea**, Iulia, Laura Cristina Ruse, and Razvan Rughinis. "Challenges in security in Internet of Things." 2017 16th RoEduNet Conference: Networking in Education and Research (RoEduNet). IEEE, 2017.

**Florea**, I., Rughinis, R., Ruse, L., & Dragomir, D. (2017, May). Survey of standardized protocols for the Internet of Things. In *2017 21st International Conference on Control Systems and Computer Science (CSCS)* (pp. 190-196). IEEE.

**Florea**, I. M., Gheorghe, L., Carabas, M., & Tapus, N. (2015, September). Routing enhancements based on evolutionary algorithm. In *Intelligent Computer Communication and Processing (ICCP), 2015 IEEE International Conference on* (pp. 491-497). IEEE.

Ilie-Ablachim, D., George Cristian Pătru, Iulia-Maria **Florea**, Daniel Rosner. *Monitoring device for culture substrate growth parameters for precision agriculture*, RoEduNet Conference September 2016

**Florea**, I.M., Rebedea, T., Chiru, C.G. *Parser de dependențe pentru limba română realizat pe baza parserelor pentru alte limbi romanice*. Revista Romana de Interactiune Om-Calculator 7(1), 1-20, 2014.