

PERSONAL INFORMATION

Andreea Valeria Vesa



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European Union - 2017-2020 | Horizon 2020

WORK EXPERIENCE

March 2018 – Present

Machine Learning Research Assistant & PhD Student
Technical University of Cluj-Napoca, Cluj-Napoca (Romania)

I am part of the Distributed Systems Research Laboratory and my main responsibilities are to design, implement and optimize large-scale distributed data processing solutions for Big Data Analytics, Energy Efficiency in Large Scale Distributed Systems, Ambient Assisted Living.

Dec 2015 – March 2018

Image Processing Software Developer
Robert Bosch, Cluj-Napoca (Romania)

I was part of the Driving Assistance group in the Research & Development department. My main responsibilities were to develop, improve and validate ADAS (Advanced Driver-Assistance Systems) features for the stereo vision camera system with the last generation systems. Main work was done in C++ with additional prototyping and validation tools such as Matlab and Python. Since July 2017 up to March 2018 I was also responsible for mentoring a student for the diploma thesis regarding machine learning topics, mainly pattern recognition and classification of particular features in the driving scenes.

Feb 2015 – Jul 2015

Research Intern
TIMC-IMAG Laboratory, Grenoble (France)

I was part of the Computer-Aided Medical Interventions (CAMI) Research group, where I have contributed to the development of the CamiTK framework (C++) by building an ultrasound-guided needle navigation system that will assist pathologists in their forensic gestures to investigate corpses during postmortem examinations with increased accuracy, yet with minimal invasiveness.

Apr 2013 – Aug 2014

Undergraduate Researcher
Technical University of Cluj-Napoca, Cluj-Napoca (Romania)

I was part of the Image Processing and Pattern Recognition Research Center (IPPRRC), working for the CoMoSef Celtic-Plus research project where my main activity and responsibility was to implement and optimize a mono vision pedestrian detector targeted at Android-based mobile platforms (algo in C++, interface in Java).

EDUCATION AND TRAINING

2014–2015

MSc in Computer Science
Grenoble Institute of Technology - ENSIMAG, Grenoble (France)

Principal subjects covered:

- Computer Vision
- Machine Learning and Category Representation
- Autonomous Robotics

- Medical Imaging Simulation and Robotics
- Computational Geometry
- Computer Graphics
- Virtual Reality and User Interfaces

Master Thesis - "Ultrasound-based Guidance for Surgical Navigation in Postmortem Examinations" - grade 14.25/20

Award - Grenoble INP Foundation Scholarship for Academic Excellence

2010–2014 **BSc in Computer Science**
 Technical University of Cluj-Napoca, Cluj-Napoca (Romania)

Principal subjects covered:

- Image Processing, Pattern Recognition Systems
- Software Design, Software Engineering
- Fundamental Algorithms, Logic Programming
- Artificial Intelligence, Intelligent Systems, Knowledge Based Systems
- Database Design
- Distributed Systems, Computer Networks
- Programming Techniques, Functional Programming
- Computer Graphics
- Operating Systems Design

Diploma Thesis - "Pedestrian Detection Optimization for Android-based Mobile Platforms" - grade 10/10

Budget=yes Scholarship=yes

2006–2010 **High School Diploma**
 Emil Racovita National College, Cluj-Napoca (Romania)

Mathematics-Informatics, Intensive English

Major occupational skills covered:

- Basic programming and database skills (C++, Oracle)
- Mathematics
- English skills

Baccalureate Degree - grade 9.85/10

Scholarship=yes

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Certificate in Advanced English (CAE) C1					
French	B2	B2	B2	B2	B2
German	A1	A1	A1	A1	A1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Technical skills **Programming Languages:** C/C++, Java, C#, Python, Matlab, SQL, Prolog, ML, Lisp, VHDL
Platforms: Windows, Linux, Android
Database Management Systems: Oracle, MySQL, MS SQL Server, Apache Cassandra
Frameworks: Spring Boot, TensorFlow, PyTorch, Qt, JNI, ASP.NET
IDEs: IntelliJ IDEA, PyCharm, MS Visual Studio, Eclipse, NetBeans, CodeBlocks, Xilinx, Mathematica, Qt Creator
Web UI Technologies: HTML, CSS, Bootstrap, Javascript, jQuery, JSP
Libraries: Apache Spark, Keras, OpenCV, OpenGL, FastCV, MARE, VTK, ITK, IGSTK
Design Tools: Enterprise Architect, UML
Version Control Tools: MKS, GIT, SVN
Testing: CppUnit, Squish Coco
Others: Latex, Jenkins, DOORS, ADF, Scrum, Jira

Communication skills Good communication skills gained through student exchange meetings in France (Guingamp) as part of high-school European partnership
 Team spirit achieved by participation at various team contests and projects (BattleLab Robotica, RoboChallenge) and voluntary work

Organisational / managerial skills **Volunteer** in the project "Food Bank" organized by Romanian Red Cross, Cluj-Napoca, 2012
Volunteer in the project "Give the gift of sight" organized by Lions Clubs International, Cluj-Napoca, 2007
Volunteer in the competition "RITTO - Romanian International Table Tennis Open for people with disabilities" organized by Little People Romania, Cluj-Napoca, 2007 and 2008
Coordinator of the project "Cluj high school students in dialogue with the local authorities" organized by Emil Racovita National College, Cluj-Napoca, 2008

Other skills

- descriptive geometry
- drawing

Driving licence B

ADDITIONAL INFORMATION

- Publications**
- Jeong, P., Vesa, A. V., Rarau, A., & Nedevschi, S. **Real-time driving assistant application for Android-based mobile devices.** In *IEEE International Conference on Intelligent Computer Communication and Processing (ICCP 2014)*, Cluj-Napoca, Romania, 4-6 September 2014, pp. 205-210
 - Varga, R., Vesa, A. V., Jeong, P., & Nedevschi, S. (2014, September). **Real-time pedestrian detection in urban scenarios.** In *IEEE International Conference on Intelligent Computer Communication and Processing (ICCP 2014)*, Cluj-Napoca, Romania, 4-6 September 2014, pp. 113-118
 - Costea, A. D., Vesa, A. V., & Nedevschi, S. **Fast Pedestrian Detection for Mobile Devices.** In *IEEE International Conference on Intelligent Transportation Systems (ITSC 2015)*, Las Palmas de Gran Canaria, Spain, 15-18 September 2015
 - Antal, M., Pop, C., Petrican, T., Vesa, A. V., Cioara, T., Anghel, I., ... & Niewiadomska-

Szynkiewicz, E. (2018). **MoSICS: Modeling, Simulation and Optimization of Complex Systems A Case Study on Energy Efficient Datacenters**. *Simulation Modelling Practice and Theory*.

- Pop, C., Pop, C., Marcel, A., Vesa A., Petrican, T., Cioara, T., ... & Salomie, I. (2018, September). **Decentralizing the Stock Exchange using Blockchain An Ethereum-based implementation of the Bucharest Stock Exchange**. In *2018 IEEE 14th International Conference on Intelligent Computer Communication and Processing (ICCP)* (pp. 459-466). IEEE.
- Petrican, T., Vesa, A. V., Antal, M., Pop, C., Cioara, T., Anghel, I., & Salomie, I. (2018, September). **Evaluating Forecasting Techniques for Integrating Household Energy Prosumers into Smart Grids**. In *2018 IEEE 14th International Conference on Intelligent Computer Communication and Processing (ICCP)* (pp. 79-85). IEEE.

Honours and awards

- Best Design Prize at "**BattleLab Robotica**" Sumo Robot Competition, Cluj-Napoca 2013
- Second prize at "**BattleLab Robotica**" Sumo Robot Competition, Cluj-Napoca 2013
- Mention at the Cluj County French Language Olympiad, 2008

Certifications

- **European Computer Driving Licence Core**, Syllabus Version 4.0, ECDL Romania, 2010
- **Database Design and Programming with SQL**, ORACLE Academy, 2010

Seminars

- Participation to **Best Training Week**, Cluj Napoca, Romania 2011
- Participation to **Ideas & Projects Workshop Summer School - Web Programming**, Calimanesti, Romania 2011
- Participation to **World Citizenship Program** organized by AIESEC, Cluj-Napoca, Romania 2008
- Participation to **International Service Learning Global Issues Workshop** organized by University of South Carolina, Cluj-Napoca, Romania 2007