Europass Curriculum Vitae

Personal information

Name / Surname	**Coleșa Adrian**
Address	Technical University of Cluj-Napoca Department of Computer Science Baritiu 26-28, Cluj-Napoca 400027, Romania
Personal Email	adrian.colesa@cs.utcluj.ro
Nationality	Romanian
Gender	Male

Current Position

Title	Associate Professor
Organization	Department of Computer Science, Technical University of Cluj-Napoca, Romania
Title	Senior Security Researcher
Organization	Bitdefender, Cluj-Napoca, Romania

Education

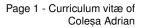|	
Dates	1998 – 2010
Title of qualification awarded	PhD, Computer Science
Scientific Field	Computer Science
Principal subjects	Thesis title: "*Dependable services, built on group communication systems, providing fast access to huge volumes of data in distributed systems*"
Name and type of organization providing education and training	Technical University of Cluj-Napoca, Romania
Dates	2003 – 2007
Title of qualification awarded	Bachelor of Theology
Field	Orthodox Theology
Principal subjects	Thesis title: "*Liturgy and anthropology Saint Nicholas Cabasila's Texts*"
Name and type of organization providing education and training	Babeș-Bolyai University, Cluj-Napoca, Romania
Dates	1996 – 1997
Title of qualification awarded	M.S. Computer Science
Principal subjects	Thesis title: "*Implementation of Active Contours Models in Image Processing using Java*"
Name and type of organization providing education and training	Technical University of Cluj-Napoca, Romania

Dates	1991 – 1996
Title of qualification awarded	B.S. Computer Science
Principal subjects	Thesis title: "*Study and Implementation of a Distributed Operating System*"
Name and type of organization providing education and training	Technical University of Cluj-Napoca, Romania

Professional Experience

Dates	2017 – present
Position	Associate Professor
Organization	Technical University of Cluj-Napoca, Romania
Department	Computer Science
Teaching subjects	Operating Systems, Operating System Design, Operating System Administration, Secure Coding, Virtualization-based Security. See `http://moodle.cs.utcluj.ro/`

Dates	2019 – present
Position	Senior Security Researcher
Organization	Bitdefender, Romania
Projects	Virtualization-Based Security, Cloud Security, Operating System Security, Quantum Computer Software Stack Security

Dates	2006 – 2017
Position	Senior Lecturer
Organization	Technical University of Cluj-Napoca, Romania
Department	Computer Science
Teaching subjects	Operating Systems, Operating System Design, Operating System Administration, Secure Coding, Hardware-based Security. See `http://moodle.cs.utcluj.ro/`

Dates	2001 – 2006
Position	Junior Lecturer
Organization	Technical University of Cluj-Napoca, Romania
Department	Computer Science
Teaching subjects	Operating Systems, Design of Operating Systems

Dates	1998 – 2001
Position	Teaching Assistant
Organization	Technical University of Cluj-Napoca, Romania
Department	Computer Science
Teaching subjects	Computer Programming, Data Structure and Algorithms, Operating Systems, Design of Operating Systems

Publications

1	Radu Marian Portase, Andrei Marius Muntea, Andrei Mermeze, Adrian Colesa, and Gheorghe Sebestyen. Detection strategies for com, wmi, and alpc-based multi-process malware. *Sensors (14248220)*, 24(16), 2024

2   Radu Marian Portase, Adrian Colesa, and Gheorghe Sebestyen. Specrep: Adversary emulation based on attack objective specification in heterogeneous infrastructures. *Sensors*, 24(17):5601, 2024

3   Radu Marian Portase, Raluca Laura Portase, Adrian Colesa, and Gheorghe Sebestyen. Leda—layered event-based malware detection architecture. *Sensors*, 24(19):6393, 2024

4   Răzvan-Mihai Bolunduț, Adrian Coleșa, and Radu Portase. Automatic identification of needed capabilities for a linux application based on static analysis of kernel code. In *2024 IEEE 20th International Conference on Intelligent Computer Communication and Processing (ICCP 2024)*, 2024

5   Marian Șandor, Radu Portase, and Adrian Coleșa. Enhancing ml model resilience to time-evolving data în malware detection systems with adversarial learning. In *2024 IEEE 20th International Conference on Intelligent Computer Communication and Processing (ICCP 2024)*, 2024

6   Radu Marian Portase, Adrian Coleșa, and Gheorghe Sebestyen. Efficient multi-stage detection of malicious windows executable during execution. In *2023 IEEE 19th International Conference on Intelligent Computer Communication and Processing (ICCP 2023)*, 2023

7   Marian Șandor, Radu Marian Portase, and Adrian Coleșa. Ember feature dataset analysis for malware detection. In *2023 IEEE 19th International Conference on Intelligent Computer Communication and Processing (ICCP 2023)*, 2023

8   Robert Váradi, Adrian Coleșa, and Gabriel Raț. Infrastructure for capturing and persisting virtualization-specific events triggered by in-guest process executions for behavioral-based analysis. In *2021 20th RoEduNet Conference: Networking in Education and Research (RoEduNet)*, pages 1–6. IEEE, 2021

9   Andrei Luțaș, Gheorghe Sebestyen, Raul Toșa, and Adrian Coleșa. Ve-vmi: High-performance virtual machine introspection based on virtualization exception. In *2021 20th International Symposium on Parallel and Distributed Computing (ISPDC)*, pages 73–80. IEEE, 2021

10   Radu-Marian Portase and Adrian Coleșa. Curator-a system for creating data sets for behavioral malware detection. In *2021 20th International Symposium on Parallel and Distributed Computing (ISPDC)*, pages 57–64. IEEE, 2021

11   Bogdan Pavel Deac and Adrian Colesa. Following the pebble trail: Extending return-oriented programming to risc-v. In *Proceedings of the 2020 ACM SIGSAC Conference on Cloud Computing Security Workshop*, pages 161–161, 2020

12   Kinga Marton, Laurentiu Lazar, Adrian Colesa, and Alin Suciu. Costs and benefits of adaptive testing in assessment of random number sequences. *PROCEEDINGS OF THE ROMANIAN ACADEMY SERIES A-MATHEMATICS PHYSICS TECHNICAL SCIENCES INFORMATION SCIENCE*, 21(1):37–44, 2020

13   Dávid Ács and Adrian Colesa. Securely exposing machine learning models to web clients using intel sgx. In *2019 IEEE 15th International Conference on Intelligent Computer Communication and Processing (ICCP)*, 2019

14   Lilla Nagy and Adrian Colesa. Router-based iot security using raspberry pi. In *2019 18th RoEduNet Conference: Networking in Education and Research (RoEduNet)*, 2019

15   Balint Szabo and Adrian Colesa. A flexible windows workspace saving and restoring utility. In *2019 IEEE 15th International Conference on Intelligent Computer Communication and Processing (ICCP)*, pages 561–568. IEEE, 2019

16 | Gergő János Széles and Adrian Coleşa. Malware clustering based on called api during runtime. In *International Workshop on Information and Operational Technology Security Systems*, pages 110–121. Springer, Cham, 2018

17 | Adrian Pop, Adrian Colesa, Andrei Lutas, Alexandru Gurzou, Sandor Lukacs, Raul Tosa, and Daniel Ţicle. Fast switch into a trustworthy virtual machine for running security-sensitive applications. In *2018 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR)*, pages 1–6. IEEE, 2018

18 | Alexru Mihai Lungana-Niculescu, Adrian Colesa, and Ciprian Oprisa. False positive mitigation in behavioral malware detection using deep learning. In *2018 IEEE 14th International Conference on Intelligent Computer Communication and Processing (ICCP)*, pages 197–203. IEEE, 2018

19 | Dan Luţaş, Adrian Coleșa, Sándor Lukács, and Andrei Luţaş. Secure Virtual Machine for Real Time Forensic Tools on Commodity Workstations. In *International Conference for Information Technology and Communications*, pages 193–208. Springer International Publishing, 2016

20 | Sándor Lukács, Adrian Coleşa, and Gheorghe Sebestyén. BITMIX: A hardware accelerated randomized symmetric encryption method. In *Automation, Quality and Testing, Robotics (AQTR), 2016 IEEE International Conference on*, pages 1–6. IEEE, 2016

21 | Adrian Coleşa, Sándor Lukács, Vlad Ioan Topan, and Radu Ciocaş. Server-Triggered Trusted User Confirmation of Transactions Performed on Remote Sites. *Automation, Computers, Applied Mathematics (ACAM)*, pages 1–11, 2015

22 | Adrian Coleşa, Sándor Lukács, Vlad Topan, Radu Ciocaş, and Adrian Pop. Efficient Provisioning of a Trustworthy Environment for Security-Sensitive Applications. In *Proceedings of the 8th International Conference on Trust and Trustworthy Computing (TRUST2015)*, pages 300–309. Springer International Publishing, August 2015

23 | Andrei Luţaş, Sándor Lukács, Adrian Coleşa, and Dan Luţaş. Proposed Processor Extensions for Significant Speedup of Hypervisor Memory Introspection. In *Proceedings of the 8th International Conference on Trust and Trustworthy Computing (TRUST2015)*, pages 249–267. Springer International Publishing, August 2015

24 | Andrei Luţaş, Adrian Coleşa, Sándor Lukács, and Dan Luţaş. U-HIPE: hypervisor-based protection of user-mode processes in Windows. *Journal of Computer Virology and Hacking Techniques*, 2015

25 | Adrian Coleșa, Tudor Bura, Adrian Pop, and Sándor Lukács. Fast creation of short-living virtual machines using copy-on-write RAM-disks. In *Automation, Quality and Testing, Robotics, 2014 IEEE International Conference on*, pages 1–6. IEEE, 2014

26 | Ciprian Oprişa, George Cabău, and Adrian Coleşa. Automatic code features extraction using bio-inspired algorithms. *Journal of Computer Virology and Hacking Techniques*, pages 1–12, November 2013

27 | Ciprian Oprişa, George Cabău, and Adrian Coleșa. From Plagiarism to Malware Detection. In *Proceedings of The 15th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC '13)*, Timişoara, Romania, 2013. IEEE Computer Society

28 | Adrian Coleșa and Ioan Stan. Improving the responsiveness of replicated virtualized services in case of overloaded replicas connectivity. In *Proceedings of The 14th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC '12)*, pages 287 – 294, Timişoara, Romania, 2012. IEEE Computer Society

29 | Adrian Coleşa, Alexandra Coldea, and Iosif Ignat. Flexible organization in the orcfs relational file system for efficient file searching. *Scalable Computing: Practice and Experience. Scientific International Journal for Parallel and Distributed Computing*, 12(1), March 2011

30	Adrian Coleșa and Mihai Bica. An adaptive virtual machine replication algorithm for highly-available services. In *Proceedings of the Federated Conference on Computer Science and Information Systems (FedCSIS'11)*, pages 941–948, Szczecin, Poland, 2011. IEEE Computer Society

Books/Chapters

1	Ciprian Oprișa and Adrian Coleșa. *Sisteme de Operare. Îndrumător de laborator.* UT-Press, Cluj-Napoca, Romania, 2021
2	Adrian Coleșa, Zoltan Șomodi, and Iosif Ignat. *Sisteme de Operare. Chestiuni teoretice și practice.* UTPress, Cluj-Napoca, Romania, 2007
3	Adrian Coleșa and Zoltan Șomodi. *Proiectarea Sistemelor de Operare. Îndrumător de laborator.* UTPress, Cluj-Napoca, Romania, 2005
4	Adrian Coleșa. *Web-based learning (chapter)*, pages 5–83. Editura Casa Cărții de Știință, Cluj-Napoca, Romania, 2000

Research Projects

Dates	2024 – 2026
Project Name	*Cybersecurity Seminars*
Financial Support	Google.org, Grant 2024-348638
Project Scope	Developing students' technical skills in the field of cybersecurity and raising cybersecurity awareness in the local community.
Position	Director
Principal responsability	Supervise all project activities. Participate in teaching material preparation and teach classes on "OS Security" and "Software Security". Work with students and keep in touch with local comunity organizations.
Organization	UTCN
Dates	June, 2020 – December, 2022
Project Name	*GEIGER Cybersecurity Counter*
Financial support	UE, H2020-SU-DS03, Grant 883588/2020
Position	Research member
Principal responsability	Develop courses for different levels of cybersecurity certifications for SME
Organization	Cluj-IT Cluster, Romania
Dates	October, 2017 – September, 2018
Project Name	STARG-VM: Server Triggered Protection of Client Applications by Running Their Security-Sensitive Phases in a Trusted VM
Financial support	Grant 230PED/2017, PN-III-P2-2.1-PED-2016-2073 from UEFISCDI, Romanian Ministry of Education and Scientific Research
Position	Project coordinator
Principal subjects	Bring an Experimental Virtualization-Based Security Product to Technology Readiness Level 4
Organization	Technical University of Cluj-Napoca, Department of Computer Science, Romania
Dates	June, 2013 – December, 2018
Project Name	Evaluation of the sate-of-the-art and implementation of a demo software regarding the field of information security on MS Windows operating systems using security methods based on Intel hardware virtualization support
Financial support	Bitdefender Ltd., Antivirus and Security Company

Position	Project coordinator at UTCN
Principal subjects	Research of the main directions regarding information security methods based on virtualization
Organization	Technical University of Cluj-Napoca, Department of Computer Science, Romania
Dates	November, 2014 – October, 2015
Project Name	Feasibility study and design of a software subsystem for providing high-availability for Cloud software services (rom. Studiu de fezabilitate și design software pentru subsistemul software de asigurare a disponibilității serviciilor software in Cloud)
Financial support	Inovative project POSCCE/SMIS 49752
Position	Subproject coordinator at UTCN
Principal subjects	Design of a software strategy and system for providing high-availability of services in Cloud using virtual machine replication
Organization	Technical University of Cluj-Napoca, Department of Computer Science, Romania
Dates	2010 – 2013
Project Name	Initiative for Globus in Europe (IGE)
Financial support	Grant 261560/2010 Seventh Framework Programme (FP7)
Position	Research member
Principal subjects	Globus infrastructure support, test and maintenance of Globus configurations and applications
Organization	Technical University of Cluj-Napoca, Department of Computer Science, Romania
Dates	2006 – 2007
Project Name	Innovative Strategies for Fast and Flexibly Data Organization and Searching in File Systems
Financial support	Grant 24/2007 from Romanian Ministry of Research and Education
Position	Research member
Principal subjects	Support for user attributes of files, new concepts for data organization in file systems, integration of the new concepts with existing applications
Organization	Technical University of Cluj-Napoca, Department of Computer Science, Romania
Dates	2005 – 2008
Project Name	MEDIOGRID: Parallel and distributed graphical computation over GRID of geographical and environmental data
Financial support	Grant 19CEEX-I03/2005 from Romanian Ministry of Research and Education
Position	Research member
Principal subjects	Distribution of huge volumes of data over Grid
Organization	Technical University of Cluj-Napoca, Department of Computer Science, Romania
Dates	2003 – 2004
Project Name	Research for Curricula Update with Microsoft Technologies
Financial support	Grant 2003-177 from Microsoft Research
Position	Research member
Principal subjects	Usage of Microsoft Windows XP services for teaching operating system
Organization	Technical University of Cluj-Napoca, Department of Computer Science, Romania
Dates	1999 – 2000
Project Name	Software framework for object oriented distributed programming
Financial support	Grant 33830/1998, theme 37/12 from Romanian Ministry of Research and Education
Position	Research member

Principal subjects	Study and development of group communication services
Organization	Technical University of Cluj-Napoca, Department of Computer Science, Romania

Patents

Publication Date	2018/1/30
Title	Anti-malware systems and methods using hardware-assisted code injection
Authors	Sandor Lukacs, Adrian Colesa
Patent number	9881157
Publication Date	2017/2/7
Title	Enabling a secure environment through operating system switching
Authors	Sandor Lukacs, Radu Ciocas, Vlad Topan, Adrian Colesa, Raul Tosa
Patent number	US 9563457
Publication Date	2016/11/29
Title	Systems and methods for batch processing of samples using a bare-metal computer security appliance
Authors	Sandor Lukacs, Adrian Colesa
Patent number	US 9507939
Publication Date	2016/7/5
Title	Bare-metal computer security appliance
Authors	Sandor Lukacs, Adrian Colesa
Patent number	US 9383934
Publication Date	2016/4/19
Title	Below-OS security solution for distributed network endpoints
Authors	Sandor Lukacs, Adrian Colesa
Patent number	US 9319380
Publication Date	2015/8/25
Title	Strongly isolated malware scanning using secure virtual containers
Authors	Sandor Lukacs, Dan Lutas, Adrian Colesa
Patent number	US 9117081

Fellowships, Awards, Certifications

Date	March – June, 2021
Fellowships	Visiting Fulbright Scholarship
Goal	Develop new master programs in cybsersecurity
Subject	Meetings with academic and industry leadership and professionals in USA to learn about their master programs and industry requirements in the cybsersecurity field
URL	https://fulbright.edu.pl/cybersecurity-study-visits/
Organization	Fullbright Polonia
Fellowships	Postdoctoral Fellowships, PARTING (POSDRU) project
Date	May 2014 - October 2015
Subject	Virtualization-Based Protection of Security-Sensitive Client Applications

Organization	Technical University of Cluj-Napoca, Romania
Certificate	Offensive Security Certified Professional (OSCP)
Date	December 2014
Certification authority	Offensive Security, `https://www.offensive-security.com/`
Award	Best Paper Award
Date	May 2014
Paper	Fast creation of short-living virtual machines using copy-on-write RAM-disks
Conference	IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR 2014)
Fellowships	Visiting Student
Dates	March – June, 1997
Principal subjects	Image processing algorithms
Organization	Technical University of Athens, Greece
Fellowships	Visiting Professor
Dates	August – September, 1999
Principal subjects	Study of Web-authoring tools and development of a guide for writing a Web-course
Organization	University of Limerick, Ireland

Personal Skills and Competences

Mother tongue **Romanian**

Self-assessment
European level[(*)]

	Understanding			Speaking				Writing	
	Listening		Reading		Spoken interaction		Spoken production		Writing	
English	B2	Independent user	C1	Proficient user	C1	Proficient user	B2	Independent user	C1	Proficient user
German	A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user

[(*)] *Common European Framework of Reference* (CEF) level

June 2nd, 2025