

Curriculum



Vitae



Personal Information

Name Ciprian DOBRE
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Professional Experience


Period Since Nov. 2009
Position Professor Habil. (since 2016), Associate Professor (2013 – 2016), Lecturer (2009 – 2013)
Vice-Dean of the Faculty of Automatic Control and Computers (in charge of Research and Quality Management), Member of the Faculty Council.
Responsible for the CRESCDI office for Digitalisation of RDI activities within UPB.
UPB representative as member in European Open Science Cloud (EOSC) and CESAER (the forum of universities of science and technology in Europe)
Scientific Evaluator for European Commission and for national funding agencies in different programmes (Netherlands, Italy, Latvia, Poland, etc.).
Member of EUA Research and Innovation Strategy Group (RISG), the board developing the research and innovation strategy and policy for all topics of relevance to European universities, providing advice and support to the EUA Board based on strategic horizon scanning and policy review.
Activities and responsibilities Research in Wireless and Broadband Networks, Internet of Things, Communication Protocols, Data Science, Mobile and Ubiquitous Computing, Security and Privacy for Mobile and Urban Smart Technologies, Monitoring Wireless Networks, Modelling / Simulation, Mobile applications (embedded, vehicular networks).
Teaching courses on "Communication Protocols", "Parallel and Distributed Algorithms", "Web Programming", "Cloud Computing" and "Dependable Systems". Previously courses on "Instruments for Program Development", "E-Learning", "Database Administration".
Research activities in national and international projects (minimum 70% of time)
Coordinator of the Pervasive Services and Products (MobyLab - UPB) laboratory.
Coordinator of the Advanced Software Services Master module at the Faculty of Automation Control and Computers, UPB, co-supervisor of the bilateral studies Agreement with Telecom SudParis, France. Responsible for Erasmus agreements with over 20 HEIs in Europe.
Name of employer University POLITEHNICA of Bucharest, Romania
Domain of activity Education and Research-Development
Period Since Feb. 2017
Position Senior Researcher 1st Degree (previously Head of Department 08.02, „ Research-Development of Systems and Applications for Society”)
Activities and responsibilities Research in the field of pervasive and mobile products and services, large-scale distributed systems, modelling and optimization, e-Government

Name of employer	National Institute for Research and Development in Informatics (ICI)
Domain of activity	Research and Development
Period	Since 2017
Position	Manager of SmartRDI (http://smartrdi.net)
Name of employer	SmartDI is a Romanian SME acting as Research and Innovation Hub, with a particular focus on technologies on mobile computing and IoT.
Domain of activity	Research-Development and Entrepreneurship
Period	Since 2003
Position	Other positions IT Expert / Officer, respectively Cabinet Director (May 2015-February 2016) for National Authority for Scientific Research and Innovation (ANCSI) / Ministry of Research and Innovation (MCI) / Ministry of Research, Innovation and Digitalisation (MCID) - Coordination / design of support IT platforms for research management - Research-Development in e-administration, Web support platforms for e-government Founding member of IEEE Romania - Treasurer of the IEEE Romania Section (2014-2017) Research Associate of the California Institute of Technology (Caltech), between 2003 and 2014 - CDI expert for solutions in the field of large distributed systems - MONARC, MonALISA, LISA, FDT projects (the last two being the winners of the world record for transfer speeds, a record set in 2006-2009 during the Bandwidth Challenge competition organized at the SuperComputing international conference).

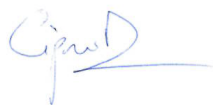
Education

Period	Dec. 2014
Training institution	University POLITEHNICA of Bucharest, Higher Education Institution
Field studied / skills	Defence of Habil. Thesis, "Mobile Context-Driven Applications and Services for Ubiquitous Computing". As result, C. Dobre is member of the Doctoral School of the Faculty of Automatic Control and Computers, UPB, since 2015.
Period	2010-2013
Training institution	University POLITEHNICA of Bucharest, Higher Education Institution
Field studied / skills	Postdoctoral studies within the project POSDRU/89/1.5/S/62557 "Excellence in research through postdoctoral programs in priority fields of the knowledge-based society" (EXCEL), under the scientific coordination of Prof. Dr. Eng. Nicolae ȚAPUȘ.
Classification level	Post-doctoral studies in Pervasive Systems and Services
Period	2004-2008
Training institution	University POLITEHNICA of Bucharest, Higher Education Institution
Field studied / skills	Doctorate (4 years), Computer Science Department, Faculty of Automatic Control and Computers, under the supervision of Prof. Dr. Ing. Valentin Cristea. Thesis title: "Advanced Simulation Techniques for Grid Systems".

Classification level	Public Defence: January 14, 2008, CUM LAUDAE distinction. PhD Studies
Period	2003-2004
Training institution	University POLITEHNICA of Bucharest, Higher Education Institution
Field studied / skills	Master's program "Advanced Computer Architectures", Faculty of Automation and Computers. Dissertation Thesis on "Optimized data structures for event queue implementations". Developed, as team member, the MonALISA monitoring platform, in use to monitor large scale distributed systems (Tool used around the clock: more than 350 services are running at sites around the world; it collects more than 2 million persistent parameters in real-time, with 25.000 updates per second; provides control for approximately 40.000 computers and 100 WAN links worldwide, supporting 8 million user requests each day).
Classification level	Master Studies
Period	1998-2003
Training institution	University POLITEHNICA of Bucharest, Higher Education Institution
Field studied / skills	C3 specialization on Distributed Systems. Courses on Parallel processing algorithms, Program systems for computer networks, Distributed programming languages, Design of translators, Communication protocols, Operating systems, Databases, Structure of computing systems, Elements of computer graphics, programming engineering, Object oriented programming. Diploma thesis: "MONARC 2 (Models of Networked Analysis at Regional Centers)". Developed MONARC 2, simulator used to evaluate production systems for LHC experiments at CERN (http://monarc.cacr.caltech.edu/). The work was carried out under the guidance of Prof. Dr. Ing. Valentin Cristea and in collaboration with the California Institute of Technology and the European Organization for Nuclear Research.
Classification level	Bachelor Studies
Period	Nov. 2014
Training institution	University of New Mexico, SUA
Field studied / skills	"Web Application Architectures" course, Certificate accompanied by the Graduation Diploma, course organized by Coursera Platform, supported by Prof. Gregory L. HELLEMAN
Qualification	System Architect
Classification level	Post-doctoral studies
Period	Dec. 2011
Training institution	coursera.org / Stanford University, SUA
Field studied / skills	"Machine Learning", Certificate accompanied by Graduation Diploma, course organized by Coursera Platform, supported by Andrew NG, professor at Stanford University.
Qualification	Expert on Data processing algorithms
Classification level	Post-doctoral studies



Period	Jan. 2012
Training institution	University POLITEHNICA of Bucharest, Higher Education Institution
Field studied / skills	"Development of managerial and entrepreneurship skills for young researchers", course organized within the EXCEL project - POSDRU/89/1.5/S/62557, supported by Dr. Claudio DONDI. "Management of research projects", course organized within the EXCEL project - POSDRU/89/1.5/S/62557, supported by assistant. university Nicoleta IGNAT
Qualification level	Entrepreneurial skills
Classification level	Post-doctoral studies
Period	June-August 2011
Training institution	INRIA Rennes – Atlantique Bretagne, Rennes, France
Field studied / skills	Training internship within the KerData associated team: Scalable Storage for Clouds and Beyond (Ro-France support project)
Qualification level	Expert on Big Data and data processing
Classification level	Post-doctoral studies
Period	Nov. 2009
Training institution	University POLITEHNICA of Bucharest, Higher Education Institution
Field studied / skills	"Intel Parallelism Faculty 3.0" course, organized by the University POLITEHNICA of Bucharest, and supported by Davy Chapman, from the Intel Software College
Qualification level	Parallel Computing Expert
Classification level	Post-doctoral studies
Period	May 2007
Training institution	Oracle University, Oracle
Field studied / skills	"Oracle 9i: Database Administration I" and "Oracle 9i: Database Administration II" courses
Qualification level	Parallel Computing Expert
Classification level	Post-doctoral studies
Period	June-Sep. 2006
Training institution	European Center for Nuclear Research (CERN)-
Field studied / skills	Internship within the CERN OpenLab Student Program, under the coordination of Dr. Iosif C. Legrand (California Institute of Technology, USA) and Prof. Harvey Newman (California Institute of Technology, USA).
Qualification level	Expert on Grid systems and ICT tools for digitalization
Classification level	Post-doctoral studies
Supplementary info	Bibliometrics: h-index: 39 (Google Scholar), 21 (Clarivate), 24 (Scopus), i-10 index: 162



Summary of the scientific and research activity

Ciprian Dobre (Prof. dr. eng. with habilitation) (male), has scientific and scholarly contributions on Data Science, Mobile and Ubiquitous Computing, Internet of Things, Wireless Networks, Modeling / Simulation, Mobile and Urban Smart Technologies. Leading the MobyLab laboratory at UPB, he managed projects in fields like mobile communication (TTOff/MONROE, SPRINT, SENSE), sensing&monitoring (MonALISA), high-speed networking (VINCI, FDT), modelling and simulation (MONARC2, VNSim, Sim2Car), intelligent traffic management and data collection and analytics for urban congestion and air pollution reduction (MobiWay, TRANSYS, TEL-MONAER), working in close collaboration with Caltech and CERN (MONARC 2, MonALISA, FDT), Rutgers University (VNSim project), INRIA Rennes (self-adaptive distributed systems), Univ. of Twente (crowd monitoring) and others. He was awarded the Award "Gheorghe Cartianu" of the Romanian Science Academy, for work on "Optimised communication using people-centric ad-hoc networks" (in 2016), and as main developer for projects MONARC 2 simulator (officially used to evaluate computing models at CERN) and lead developer of MonALISA (the official platform for monitoring production parameters to support physics experiments at CERN) he was Fellow for California Institute of Technology for over 10 years. He was awarded an Oracle PhD fellowship during his doctoral studies. His results received one IBM Faculty Award, two CENIC Awards (for worldwide records in high-speed networking demonstrated at SuperComputing), and four Best Paper Awards. His results were published in over 100 books, chapters in edited books, articles in major international peer-reviewed journal, and well-established international conferences and workshops. He works closely with the Ministry of Research, Innovation and Digitalisation, developing digital tools for the National Research Strategy and previously working as Cabinet Director and IT officer for the organisation. Ciprian DOBRE also runs SmartRDI, a spin-off of UPB, that develops technologies like NETIoT, an IoT app-driven platform versatile to support from smart agriculture (used in the H2020 SmartAgriHubs), or for smart city and smart buildings applications, Sim2Car, a smart city simulation, or Opportunity, phone-to-phone 5G platform for contextual mobile app, are all examples of open-source SmartRDI technologies. He is the UPB representative as member in EOSC and CESAER (the forum of universities of science and technology in Europe), Scientific Evaluator for European Commission and for national funding agencies in different programmes. He is a member of EUA Research and Innovation Strategy Group (RISG), the board developing the research and innovation strategy and policy for all topics of relevance to European HEIs, providing advice and support to the EUA Board on strategic horizon scanning and policy review.

A. Research Projects and Grants

On Smart Cities:

C. Dobre is main developer of the Sim2Car simulator (Open Source at <https://github.com/cipsmm/sim2car>), started in the collaboration started between him and L. Iftode from Rutgers University, USA. The simulator extends the previously developed VNSim simulator with a realistic mobility layer (it uses real trace movement data, and the simulator runs in scenarios where cars move on the actual map of cities).

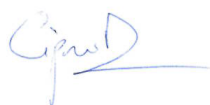
C. Dobre was Coordinator for TEL-MONAER, where a platform was developed for monitoring air quality in cities (two patents resulted) using of-the-shelf monitoring equipment. The developed platform integrated PM and air quality data from sensors, offering correlated readings and predictions. Demonstrated in piloting sites around Bucharest.



C. Dobre was Coordinator of MobyWay, a project that developed the platform where mobility car data from various sources form a Virtual Mobility Sensor –used by fleet-owning companies.

Participant in many studies for Smart Cities, C. Dobre has published results on smart routing for reducing pollution and congestions, for introducing fast tracking lanes, for Intelligent Traffic Lights and toll fee zones, dealing with realisation of VANETs and ITS, for usability of in-car apps, and many more.

- March 2018 - Feb. 2020: Mobile telemonitoring platform for air quality monitoring (TEL-MONAER) - Coordinator. Objective is to develop HW/SW for air quality monitoring. The project developed an IT system using the Internet of Things and Edge / Cloud Computing technologies to monitor and analyze in real time the risk factors for the environment and public health. Tel-MONAER provides a secure, mobile, extensible and scalable system capable of simultaneously monitoring parameters such as SO₂, NO_x, CO, O₃, PM₁₀, PM_{2.5}, meteorological parameters (wind direction and speed, pressure, temperature, solar radiation, relative humidity, precipitation).
- March. 2018 – Apr. 2021: The Robots and the Society: Cognitive Systems for Personal Robots and Autonomous Vehicles (ROBIN), PN III (2013-2020) / PCCDI 2017. ROBIN is a user-centered project designing systems and services for the use of robots in an interconnected digital society and enables companies to develop complex, intelligent and performing products and services for users and society as a whole. The project covers a diverse range of robots: assistive robots to support people with special needs, customer interaction robots, and software robots that can be installed on vehicles to achieve autonomous or semi-autonomous leadership. The project combines advanced techniques and advanced technologies of artificial intelligence, human-robot interaction, interaction with a pervasive environment, and cloud processing.
- Feb. 2017 - March 2021: Space technologies used in the management of disasters and major crises, manifested at local, national and regional levels (SPERO), PN III (2013-2020) / Soluții (SOL) (Partner responsible). SPERO created the support platform for the management of emergency situations generated by natural disasters, industrial accidents, humanitarian crisis situations or extreme atmospheric and space phenomena. This will be run by Romanian Space Agency, and we develop the satellite data hub, by building a complex geo-spatial database, visualization, processing and analysis tools; inventory of risk areas and existing and necessary means for the management of major disasters and crises; integrated situational analysis at local, national and regional level; facilitating the access to these informational resources to structures with major crisis prevention and disaster response tasks; substantiating national and regional initiatives and policies and initiatives; Integration and capitalization of national expertise in support areas such as geo-spatial sciences, geodesy, cartography, photogrammetry, remote sensing, astrophysics, optical and video data processing, security and ICT.
- Sep. 2015 – Dec. 2019: Sim2Car - evaluation of smart cities, funded by Rutgers University.
- Jan. 2015 – Jan. 2017: Real-time Data Processing Platform for Smart Cities: Making sense of Big Data (DataWay), PN II (2007-2013) / TE 2014. The project developed the tools for processing data to characterise traffic conditions and make predictions on congestions and pollution, among others.
- July 2014 – June 2017: MobyWay: Integrated Platform for Intelligent Transportation Systems of the Future, PN-II-PT-PCCA-2013-4. Collaborative platform to act as a middleware connection hub, offering an optimal support to different ITS partners and municipalities through and a data sharing and ITS support service integration platform.



- July 2010 – June 2012: TRANSYS: Models and Techniques for Traffic Optimizing in Urban Environments, CNCSIS-PN-II-RU-PD ID: 238, No. 4 / 28.07.2010. The project proposed models, methods, and techniques for optimizing traffic quality in urban environments.

On Digitalization:

C. Dobre coordinates several digitalisation initiatives. In UPB, he coordinated the development of the first CRIS platform for automatically collecting all relevant data for research activities (<https://crescdi.pub.ro/>). The platform automates all reporting on RDI activities at the level of UPB, data being transferred from public sources. Similarly, C. Dobre coordinated the platform for managing funding opportunities for UPB researchers (<https://competitions.crescdi.pub.ro/>). Currently, C. Dobre coordinates the development of the digitalisation of procedures (<https://travel.upb.ro/> is already used by researchers wanting to obtain the approval for traveling to conferences and events, all procedures being done COMPLETELY electronically). We are now implementing the next modules for the Digitalisation of procedures within UPB. For the relation with the industry, C. Dobre coordinates the realisation of <https://market.upb.ro/>, the collaborative platform for networking activities between students, companies, and the Academic staff. With CloudPRECIS, C. Dobre led the activities leading to the realisation of the PRECIS smart building, where legacy equipment is being supplemented (and the team developed the platform to connect over IIoT protocols such as bacnet, opc, etc.) by many Ambiental sensors, people counters, smart weather stations and many others, and decisions regarding the actuation of equipment is done based on smart data.

C. Dobre is responsible for Open Science policies and strategies, being the UPB representative in EOSC and CESAER. Lecturer on OS topics in various projects, he is officially an Open Science Ambassador in the EELISA Alliance of Higher Education Institutions in EU.

- Nov. 2020 – April 2023: Open Science and Research Data Management Innovative and Distributed Training Programme (TrainRDM) (partner responsible).) TrainRDM aims to empower the Education and Skills dimension of Open Science (OS) through exploring innovative mechanisms and tools to provide the skills training in particular for and Research Data Management (RDM) good practices. The project aims to analyze and map the skills training needs for OS and RDM in existing curricula in partner HEIs taking into account the different OS dimensions, target groups and level of existing knowledge; to review existing good practice in OS and RDM skills training; to develop a OS and RDM Training Methodological Toolkit; to develop, validate and diffuse a quality pilot training programme for OS and RDM; to develop a training network around OS and RDM concepts; and to encourage, motivate, support and recognise staff and students skills development in OS and RDM.
- August 2021 – August 2023: Marketplace for technology transfer of R&I data, software and results (Smardy), Eureka Traditional (partner responsible). Smardy develops a platform for Research Data Management with Blockchain-based security of data provenance.
- June 2021 – May 2024: EELISA INNOvation and COmmon REsearch strategy (EELISA innoCORE), Horizon 2020. The project develops the Research Strategy for the EELISA Alliance of HEIs in Europe, C. Dobre being an active member on the definition of Open Science policies, among others.
- Jan. 2022 – June 2024: Development of the Institutional Capacity of the POLITEHNICA University from Bucharest (DECIP), PFE 2021 (responsible for Activity 2 on Digitalization actions). The first digitalisation project of UPB, leading to many platforms today integrated into the Academic life.



- Sep. 2021 – August 2023: Increasing UPB's research capacity in Cloud technologies and massive data processing (CloudPRECIS), POC “Cloud projects and massive data infrastructures” (manager for Cloud activities). The project led to the development of the first Sma
- Jan. 2021 – Dec. 2021: The development of an innovative mechanism to transform the management of the implementation processes of CDI projects in UPB, CNFIS-FDI-2021-0294.
- Jan. 2021 – Dec. 2021: Improving the quality management of the didactic act in UPB through innovative mechanisms of digital transformation, CNFIS-FDI-2021-0256.
- Aug. 2021 – July 2024: Marketplace for technology transfer of R&I data, software and results (Smardy), Eureka Traditional (UPB Responsible).
- Nov. 2018 – Nov. 2020: Supporting the increase of the institutional research capacity of the University POLITEHNICA of Bucharest (CRESCDI), PFE 2018 (responsible for Activity 2 on Digitalization actions).

On eGovernment

Outside UPB, C. Dobre coordinates the implementation of the platform for monitoring the Romanian National RDI Strategy for the period 2021-2027 with the Ministry of Research, Innovation and Digitalization. He technically coordinates the next phase of the NUCLEU programme for the same Ministry and has worked in the past for the Ministry in various functions (being previously Cabinet Director for the period 2015-2016).

C. Dobre also coordinates the development of digitalisation initiatives for the Association of Municipalities in Romania (currently), National Office for Centralized Procurement (ONAC). He is a founding team member of the E-Caesar Centre, and expert for large projects for companies like Deloitte.

- Apr. 2021 – Dec. 2023: Strengthening the cooperation between the Ministry of Public Works, Development and Administration and the associative structures of local public administration authorities, SIPOCA 750, ICT Responsible for Association of Municipalities in Romania.
- May 2019 – Dec. 2023: Increasing the capacity of the CDI system to respond to global challenges. Strengthening the anticipatory capacity to develop evidence-based public policies, SIPOCA 592/127557, Responsible for Digitalisation Activities A16 and A17.
- Sept. 2019 – Dec. 2019: Procurement software solution for user register and online collection of requirements in centralized procurement procedures, funded by National Office for Centralized Procurement (ONAC).
- Nov. 2020 – Aug. 2021: Strategy for national participation in the new european context for coordinating security and space industry research, PN-III-P2-2.1-SOL-2020-3-0415.
- March 2018 – Apr. 2021: Preservation and Capitalization of Romanian Literary Patrimony by Means of Intelligent Digital Solutions for Data Mining and Systematisation (INTELLIT), PN III (2013-2020) / PCCDI 2017.
- March 2018 – Feb. 2019: Improving the rules, procedures and mechanisms necessary for the Authority for the Digitization of Romania in order to continue the development of the electronic commerce sector (ECOM) (Partner responsible), SIPOCA 18 / 4 Aprilie 2016.
- Nov. 2017 – Dec .2018: Techniques for storing and exploiting the results of scientific research (SOVAREX), Sectorial project.



- Sep. 2010 – Feb. 2014: Empowering Romanian Research on Intelligent Information Technologies (ERRIC), FP7.
- May 2005 – Apr. 2008: NCIT leading to EU IST excellency (EU-NCIT), FP6.
- Founding team member for the E-Caesar Center, "Center for Advanced Studies for Electronic Services", collaboration between the Politehnica University of Bucharest, the Academy of Economic Studies and the Fraunhofer Institute for Open Communication Systems from Germany.
- Coordination of the EUSD-RO national project (pilot e-Government project for the implementation of the Single Contact Point, cf. the European Directive)
- Designing the PrO system for business reporting from the industrial environment to public institutions in Romania.

On Smart Agriculture:

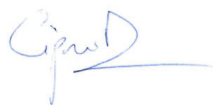
In the SmartAgriHubs, C. Dobre coordinated the development of an equipment for tracking livestock, implementing the from-farm-to-fork EU principles. The solution won the public award during the SmartAgriHubs 2021 event, and we are now preparing for scaling it in smartrdi.net. C. Dobre coordinated the development of the NETIoT platform (<https://www.youtube.com/watch?v=FzV00vNvjNE&t=34s>), a smart agriculture platform designed for farmers interested in IoT integration in their procedures.

- Nov. 2018 – Dec. 2022: Connecting the dots to unleash the innovation potential for digital transformation of the European agri-food sector (SmartAgriHubs), H2020-RUR-2018-1 / Sustainable Food Security (partner responsible). The project boosts digital transformation of the agri-food sector. By establishing a network of digital innovation hubs, it aims to stimulate digital solutions uptake in the European farming sector. In particular, UPB/SmartRDI is part of the SEE cluster, and develops IoT technology for monitoring live stocks, using BLE devices and smartphones coupled to a national stock database. Privacy of data (related to livestock) is of up-most importance to farmers and properly dealt with.
- Nov. 2018-March 2020: The NETIoT platform - <https://gitlab.com/netiot-io>.
- Jan. 2018 – Aug. 2020: Experimental Software System in Cloud Architecture for Woodland Vegetation Coverage Monitoring (ForestMon), POC Acțiunea 1.2.3 Parteneriate pentru transfer de cunoștințe
- Jan. 2014 – Jan. 2017: Information system based on cloud services, accessible through mobile devices, for quality improvement of products and business development in farms (ClueFARM), PN-II-PT-PCCA-2013-4-0870.

On eHealth:

C. Dobre coordinated the EU consortium of 5 countries for the vINCI project, that developed assisted care technologies for older adults in Europe. The technology is now being commercialised by Comtrade.

- June 2018 – Nov. 2021: Clinically-validated **IN**tegrated Support for Assistive Care and Lifestyle Improvement: the Human Link (vINCI), EU AAL Call 2017. Coordinator, 10 EU partners. vINCI develops an integrated and validated evidence-based Internet of Things (IoT) framework to deliver non-intrusive monitoring and support for older adults to augment professional health care giving. aims to enhance older adults' active ageing and, as a result, their QoL through technology. vINCI develops the integrated technology for objective monitoring and instrumentation of the QoL intervention (i.e. caregiver would be given objective results of the QoL evolution following the intervention). As QoL is



associated with the sense of independence older adult's experience, vINCI provides the technology means for them to be in constant link with their family and friends ("the Human Link"), and with their caregivers. The personal/critical data is sent through secure channels. For the patient profile, Blockchain / Distributed Ledger technology was developed by UPB.

- Oct. 2017 - Oct. 2021: COST Action CA16226, Indoor living space improvement: Smart Habitat for the Elderly (SHELD-ON). Responsible for Communication Activities. It fosters a joint research agenda on multifunctional indoor environments for healthy and safe ageing.
- Nov. 2013 – Nov. 2017: COST Action IC1303, "Algorithms, Architectures and Platforms for Enhanced Living Environments" (AAPELE), Scientific Events Chair. The Action aims to promote interdisciplinary research on Ambient Assisted Living, focusing on AAL algorithms, architectures and platforms.

On Learning:

C. Dobre coordinates several initiatives for the Digitalisation of Learning (Education 4.0 principles) in Europe. He worked in various COST Action as Board Members, acting either as Science Director or Communication Officer, just to name a few. He is a strong promoter of entrepreneurship activities, working in UPB towards the creation of the first scalable University Accelerator.

- May 2021 – Dec. 2022: EELISA UNlocking Full innOvation capacity buiLDing and entrepreneurship (EELISA Unfolds), Horizon Europe / EIT Cross-KIC Strategic Outreach
- Feb. 2022 – Feb. 2024: Education 4.0: Living Labs for the Students of the Future (LLSF), Erasmus+ 2021-1-RO01-KA220-HED-000032176 (Technical Coordinator)
- Jan. 2019 – Dec. 2024: European Engineering Learning Innovation and Science Alliance (Erasmus+), ICT responsible.
- May 2020 – May 2024: Connecting Education and Research Communities for an Innovative Resource Aware Society (CERCIRAS), COST Action.
- Dec. 2020 – June 2023: Start în carieră prin master didactic, POCU OS 6.5.
- Jan. 2016 – Dec. 2018: Excellence in Smart Data and Services for Supporting Water Management (Data4Water), H2020-TWINN-2015, UPB as Coordinator (WP4 Responsible) The project enhanced the S&T abilities in the field of smart, data driven e-services in water management, with focus on the widening organization. The complexity of research related to water management is extremely high and requires deep expertise in several ICT-related research domains. The dynamics of water and the role of humans in the water cycle are not well understood largely because environmental and socioeconomic analyses are still performed separately.
- Nov. 2010 – Sept. 2013: Strategic program promoting service innovation through open, continuous education (INSEED), POSDRU/86/1.2/S/57748 / 25 Septembrie 2010.

ICT projects:

C. Dobre coordinated and worked in various ICT projects, mostly on Distributed Systems and scalable platform development, and Internet of Things, Big Data processing, Artificial Intelligence and Cybersecurity, just to name a few. Together with Twente University, he co-supervises PhD students developing the technology for crowd tracking using WiFi, with privacy considerations. He worked under Caltech contract for over 10 years, developing the technology in support of the experiments at CERN in Switzerland.



- May 2017 – tod **Living Smart Campus** is a project done in collaboration with University of Twente (led by Maarten van Steen), the Netherlands. C. Dobre is coordinator for Scientific Researcher on accurately monitoring mobility of crowds based on scanning WiFi-enabled personal devices such as smartphones. It deals with monitoring the mobility of people, assuming they carry a device such as an electronic badge or a smartphone. Much of the current efforts are targeted toward more practical crowd monitoring, namely through scanning of WiFi-enabled personal devices such as smartphones. There are important differences with using badges. First, because so many people carry a smartphone, large-scale experiments with thousands of devices become possible. We have monitored multi-day festivals in Netherlands with over 100,000 participants. Second, WiFi data is extremely noisy, meaning that there is a tremendous data-analytics problem before we can even draw conclusions. Third, because smartphones do not detect each other, we have essentially lost a very powerful instrument: our proximity graphs. Fourth, because we are unintrusively monitoring personal devices, there are serious privacy issues to deal with. We run experiments with indoor and outdoor (see picture) sensors, previously provided by [BlueMark Innovations](#):
- April 2021 – March 2024: Federated leARNinG for human mobility (FARGO), national fund PCE.
- Oct. 2021 – April 2023: Computer system for real-time transcription of speech into text for the Romanian language and recognition of emotional states in emergency calls 112 (ODIN), Solutii fund.
- February 2017 - July 2018: Traffic and Data Offloading in Mobile Networks (TTOff), as part of H2020-ICT-2014-1 MONROE. Mechanisms for Smart switching traffic between MBB and Wi-Fi, or opportunistically through devices in proximity. Carry out experiments on a large-scale measurement platform to mitigate tech. risks associated with traffic offloading.
- April 2015 – April 2019: COST Action 1406, “High-Performance Modelling and Simulation for Big Data Applications (cHiPSet)”. Training School Chair. The Action aims to promote interdisciplinary research on Modelling and Simulation and HPC, for data-intensive domains, such as Life and Physical Sciences, and Socioeconomic Systems.
- March 2016 – Oct. 2020: Improving Applicability of Nature-Inspired Optimisation by Joining Theory and Practice (ImAppNIO), COST Action.
- Oct. 2013 – Dec. 2017: Semantic keyword-based search on structured data sources (KEYSTONE), COST Action.
- Apr. 2016 – Feb. 2020: Resilient communication services protecting end-user applications from disaster-based failures (RECODIS), COST Action.
- Jan. 2012 – Dec. 2013: Scheduling Methods for Dynamic Distributed Systems: a self-* approach (SideSTEP), Bilateral cooperation Romania - France (Brancusi Integrated Actions Program) PN-II-CT-RO-FR-2012-1-0084v.
- Jan. 2012 – Jan. 2013: Smart Internet Data Downloader and Aggregator (SideDOWN), Innovation checks (CI).
- Jan. 2010 – Dec. 2012: DataCloud@Work, France-Romania bilateral contract.
- Jan. 2009 – Dec. 2011: Models and Techniques for Ensuring Reliability, Safety, Availability and Security of Large Scale Distributed Systems, PCCE 2008 (Main applicant).
- May 2010 – April 2013: Context-Aware Platform using Integrated Mobile Services (CAPIM), POSDRU/89/1.5/S/62557. Developer of the technology.
- Sept. 2005 – Dec. 2015: Fast Data Transfer (FDT), CERN and Caltech. Developer, the technology led to obtained WorldWide records for data transferring at Supercomputing Bandwidth Challenges between 2006 and 2009. C. Dobre was awarded for that two CENIC US awards.



- Sept. 2004 – August 2008: Localhost Information Service Agent (LISA), CERN and Caltech. Developer of the technology used later by Caltech in videoconferencing apps (principles developed are now to be found in all videoconferencing apps, from Skype to zoom and all).
- Sept. 2003 – Dec. 2014: Monitoring Agents using a Large Integrated Services Architecture (MonALISA), CERN and Caltech. Main developer, the official monitoring platform for all the infrastructure at CERN – even after 15 years it runs, we have nodes that never halted once!
- Sept. 2003 – Dec. 2014: MOdels of Networked Analysis at Regional Centers (MONARC 2), CERN and Caltech. Main developer, the topic of the PhD studies, and as a result of the thesis CERN invested into upgrading their transatlantic links in support for moving physics data in the Grid.

See <https://crescdi.pub.ro/#/profile/534> for more details and full list of papers and projects.

B. Research Publication and Results

A selection of results (for more please see <https://crescdi.pub.ro/#/profile/534>):

Patents:

1. G. Suci, **C. Dobre**, R.-I. Ciobanu, M. Bălănescu, Internet of things-type system and method for real-time collecting and aggregating values of powder concentrations in suspension, measured with sensors/equipments with optical particles counters using various technologies, patent RO134853A2.
2. M. Bălănescu, G. Suci, C.M. Bălăceanu, M.A. Dobrea, **C. Dobre**, R.-I. Ciobanu, System and method for real-time correction of values of powder concentration in suspension, measured with sensors / equipments with optical particle meters for platforms using the internet of things technology, patent RO134661A2.

Published Books:

1. **Dobre, C.**, & Xhafa, F. (Eds.). (2016). *Pervasive Computing: Next Generation Platforms for Intelligent Data Collection*. Morgan Kaufmann.
2. Bessis, N., & **Dobre, C.** (Eds.). (2014). *Big data and internet of things: a roadmap for smart environments* (Vol. 546). Basel, Switzerland: Springer International Publishing.
3. Andrei, I., Cristea, V., & **Dobre, C.** (2008). Optimizarea traficului în aglomerații urbane. *Universitatea Politehnica Bucuresti Facultatea de Automatica si Calculatoare*.
4. Mavromoustakis, C. X., Mastorakis, G., & **Dobre, C.** (Eds.). (2017). *Advances in mobile cloud computing and big data in the 5G era*. Cham: Springer International Publishing.

Journal Articles:

1. Mocanu, B., Pop, F., Mihaita, A., **Dobre, C.**, & Castiglione, A. (2019). Data fusion technique in spider peer-to-peer networks in smart cities for security enhancements. *Information Sciences*, 479, 607-621. IF: 8.233
2. Chilipirea, C., Petre, A. C., Groza, L. M., **Dobre, C.**, & Pop, F. (2017). An integrated architecture for future studies in data processing for smart cities. *Microprocessors and Microsystems*, 52, 335-342. IF: 3.503 WOS:000407984000029
3. Pop, F., & **Dobre, C.** (2012). An efficient pagerank approach for urban traffic optimization. *Mathematical Problems in Engineering*, 2012. IF: 1.430 WOS:000307662600001



4. **Dobre, C.,** & Xhafa, F. (2014). Intelligent services for big data science. *Future generation computer systems*, 37, 267-281. IF: 7.307 WOS:000337931200026 *Confirmed learning material for several universities in Europe and beyond.*
5. **Dobre, C.,** & Xhafa, F. (2014). Parallel programming paradigms and frameworks in big data era. *International Journal of Parallel Programming*, 42(5), 710-738. IF: 1.447
6. Gosman, C., Cornea, T., **Dobre, C.,** Pop, F., & Castiglione, A. (2018). Controlling and filtering users data in intelligent transportation system. *Future Generation Computer Systems*, 78, 807-816. IF: 7.307 WOS:000413060400028
7. Cocîrlea, D., **Dobre, C.,** Hîrţan, L. A., & Purnichescu-Purtan, R. (2020). Blockchain in intelligent transportation systems. *Electronics*, 9(10), 1682. IF: 2.690 WOS:000587393900001
8. Hîrţan, L. A., **Dobre, C.,** & González-Vélez, H. (2020). Blockchain-based reputation for intelligent transportation systems. *Sensors*, 20(3), 791. IF: 3.847
9. Stuparu, D. G., Ciobanu, R. I., & **Dobre, C.** (2020). Vehicle detection in overhead satellite images using a one-stage object detection model. *Sensors*, 20(22), 6485. IF: 3.847 WOS:000594595700001
10. Chilipirea, C., Baratchi, M., **Dobre, C.,** & Steen, M. V. (2018). Identifying stops and moves in WiFi tracking data. *Sensors*, 18(11), 4039. IF: 3.847
11. Voicu, R. A., **Dobre, C.,** Bajenaru, L., & Ciobanu, R. I. (2019). Human physical activity recognition using smartphone sensors. *Sensors*, 19(3), 458. Q1
12. Legrand, I., Newman, H., Voicu, R., Cirstoiu, C., Grigoras, C., **Dobre, C.,** ... & Stratan, C. (2009). MonALISA: An agent based, dynamic service system to monitor, control and optimize distributed systems. *Computer Physics Communications*, 180(12), 2472-2498. Q1
13. Vlăduţu, A., Comăneci, D., & **Dobre, C.** (2017). Internet traffic classification based on flows' statistical properties with machine learning. *International Journal of Network Management*, 27(3), e1929.
14. Ciobanu, R. I., Negru, C., Pop, F., **Dobre, C.,** Mavromoustakis, C. X., & Mastorakis, G. (2019). Drop computing: Ad-hoc dynamic collaborative computing. *Future Generation Computer Systems*, 92, 889-899. Q1

Papers in Conferences and Workshops:

1. Balanescu, M., Suci, G., Dobrea, M. A., Balaceanu, C., Ciobanu, R. I., **Dobre, C.,** ... & Pasat, A. (2020). An algorithm to improve data accuracy of PMs concentration measured with IoT devices. *Adv. Sci. Technol. Eng. Syst*, 5, 180-187.
2. Balanescu, M., Oprea, I., Suci, G., Dobrea, M. A., Balaceanu, C., Ciobanu, R. I., & **Dobre, C.** (2019, May). A study on data accuracy for IoT measurements of PMs concentration. In *2019 22nd International Conference on Control Systems and Computer Science (CSCS)* (pp. 182-187). IEEE. WOS:000491270300031
3. **Dobre, C.,** Szekeres, A., Pop, F., Cristea, V., & Xhafa, F. (2012, May). Intelligent Traffic Lights To Reduce Vehicle Emissions. In *ECMS* (pp. 504-511). WOS:000319084600074
4. **Dobre, C.,** Fratila, C., & Iftode, L. (2011, July). An approach to evaluating usability of vanet applications. In *2011 7th International Wireless Communications and Mobile Computing Conference* (pp. 801-807). IEEE. WOS:000300570200134
5. **Dobre, C.,** Cristea, V., & Iftode, L. (2012, July). ILRSH: Intelligent lane reservation system for highway (s). In *2012 Sixth International Conference on Complex, Intelligent, and Software Intensive Systems* (pp. 747-754). IEEE.



6. **Dobre, C.**, Ichimescu, A., & Cristea, V. (2012, July). Adaptive traffic optimization. In *2012 Sixth International Conference on Complex, Intelligent, and Software Intensive Systems* (pp. 761-766). IEEE.
7. Petrică, B. G., Ciobanu, R. I., & **Dobre, C.** (2021, July). Automatic Traffic Light Preemption for Intelligent Transportation Systems. In *2021 20th International Symposium on Parallel and Distributed Computing (ISPDC)* (pp. 1-8). IEEE. WOS: 000703930200001
8. Petre, A. C., Chilipirea, C., Baratchi, M., **Dobre, C.**, & van Steen, M. (2017). WiFi tracking of pedestrian behavior. In *Smart Sensors Networks* (pp. 309-337). Academic Press. WOS:000472994100016
9. Stoica, C. S., **Dobre, C.**, & Pop, F. (2014). Realistic Mobility Simulator For Smart Traffic Systems And Applications. In *ECMS* (pp. 530-537).
10. Gosman, C., Cornea, T., **Dobre, C.**, Pop, F., & Castiglione, A. (2016, July). Putting the user in control of the intelligent transportation system. In *Australasian Conference on Information Security and Privacy* (pp. 231-246). Springer, Cham. WOS:000386508700014
11. Popa, D., **Dobre, C.**, & Pop, F. (2017, May). Energy reduction platform based on occupant behavior pattern detection in enhanced living environments. In *2017 IFIP/IEEE Symposium on Integrated Network and Service Management (IM)* (pp. 1174-1177). IEEE.
12. Ciobanu, R. I., **Dobre, C.**, Reina, D. G., & Toral, S. L. (2017, June). A dynamic data routing solution for opportunistic networks. In *2017 14th International Conference on Telecommunications (ConTEL)* (pp. 83-90). IEEE. WOS:000427070900015
13. Mihaita, A. E., **Dobre, C.**, Pop, F., Mavromoustakis, C. X., & Mastorakis, G. (2017). Secure opportunistic vehicle-to-vehicle communication. In *Advances in Mobile Cloud Computing and Big Data in the 5G Era* (pp. 229-268). Springer, Cham.
14. Gainaru, A., **Dobre, C.**, & Cristea, V. (2009, April). A realistic mobility model based on social networks for the simulation of VANETs. In *VTC Spring 2009-IEEE 69th Vehicular Technology Conference* (pp. 1-5). IEEE.

Research Awards (selection)

- 2017: Best Poster Award, for the work "C. Dobre, F. Pop, C. Gosman, Privacy-preserving data aggregation in Intelligent Transportation Systems", FNSCC 2017 within IEEE/IFIP IM 2017, Portugal, 2017.
- 2016: "Gheorghe Cartianu" Award offered by the Romanian Academy, 2014 (awarded in 2016). Group of nine papers: "Optimization of communication through human-centered ad hoc networks", main Romanian authors: Prof. Ciprian Dobre, Dr. Radu Ioan Ciobanu.
- 2015: Runner Up Award, 5th International Conference on Cloud Computing and Services Science (CLOSER 2015), Lisbon, Portugal, for the paper "Antonio M. Alberti, Waldir Moreira, Rodrigo da R. Righi, Francisco J. Pereira Neto, Ciprian Dobre, Dhananjay Singh, Towards An Opportunistic, Socially-Driven, Self-Organizing, Cloud Networking Architecture with NovaGenesis".
- 2015: Outstanding reviewer for Future Generation Computer Systems (FGCS) Journal – Elsevier.
- 2014: Outstanding reviewer for Ad Hoc Networks Journal – Elsevier.
- 2013: IBM Faculty Award 2013, pentru proiectul cu titlul "Multi-modal Informational Management & Analysis for Context-aware Smart Cities".
https://www.research.ibm.com/university/pdfs/2013_faculty_award_recipients.pdf.



- 2013: Best Paper Award, for work on “D. Urda, C. Dobre, F. Pop, Storing location-aware data in mobile distributed systems, in Proc. of 12th International Symposium on Parallel and Distributed Computing (ISPDC 2013), Bucharest, Romania, pp. 135-142, (DOI: 10.1109/ISPDC.2013.26) June 2013”.
- 2013: World 2nd place, obtained within MANIAC Challenge 2013, Berlin, Germany – the team coordinated by C. Dobre demonstrated advanced algorithms for data offloading within mobile networks.
- 2012: Best Paper Award, for the work "R.-C. Marin, C. Dobre, F. Xhafa, Exploring Predictability in Mobile Interaction, in Proc. of Third International Conference on Emerging Intelligent Data and Web Technologies (EIDWT-2012), Bucharest, Romania, pp. 133-139, September 2012".
- 2010: Best Paper Award, for the work "C. Dobre, F. Pop, V. Cristea, A fault-tolerant approach to storing objects in distributed systems, in Proc. of International Conference on P2P, Parallel, Grid, Cloud and Internet Computing (3PGCIC 2010), Fukuoka, Japan, pp. 1-8, November 2010".
- 2008: C. Dobre was awarded the Corporation of Education Network Initiatives in California (CENIC) award for international achievements in the field of high-speed communication systems.
- 2006: Award for advanced transfer solutions awarded in 2006 by CENIC, for high-speed transfers (for results obtained in the FDT and LISA projects within the Bandwidth Challenge competition organized within the SuperComputing event).

Member of several Journal Boards:

- Since 2016 (previously being Associate Technical Editor) to 2021, C. Dobre acted as Series Editor for IEEE Communications Magazine (the main journal of IEEE Communications Society, IF: 4.007), "Ad Hoc and Sensor Networks" Series.
- Connection Science (0954-0091) Associate Editor.
- Special Issue editor for several journals: IEEE Transactions on Sustainable Computing, Journal of Parallel and Distributed Computing, International Journal of Embedded Systems (IJES), Soft Computing, Sensors, IEEE Access, International Journal of Distributed Sensor Networks, International Journal of Grid and Utility Computing (IJGUC), International Journal of Intelligent Systems Technologies and Applications (IJISTA), etc.

Independent scientific reviewer for various funding agencies: UEFISCDI (national evaluator), PNRR (Romania evaluator), GEX (UPB and UVT), Latvia (EU Structural and Cohesion Fund 2014-2020), Italy (national funding programme), Netherlands (national funding programme), Switzerland (Swiss National Science Foundation), UK (national funding programme), Croatia (EWFELPRO calls, Ministry of Science, Education and Sports of the Republic of Croatia (MSES), 2014), Poland (National Science Center), H2020 (Cooperation and Information on Social Security Coordination), EU Clean Sky Joint Undertaking (16th call official evaluator, Clean Sky 9 evaluator, Clean Sky 2 2015 evaluator, Call SP1-JTI-CS-2014-01 2014, Call SP1-JTI-CS-2013-02 2013), EU EUREKA (calls 2018, 2017, 2016), EU EUREKA-EUROSTARS (2017, 2015), Celtic Plus (2016), EU FP7 (call VP/2012/004, „Actions for Cooperation and Information on Social Security Coordination”, 2012).

15.11.2022

Ciprian DOBRE