

Sebastien VARRETTE, PhD

Research Scientist, Deputy Head HPC for Research
Management, Security and Performance of HPC systems

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Born on November 27th, 1979 (in France)

Married (2004), two children (2007,2010)

Short bio: With more than 12 years of postdoctoral and team management experience, Dr. Varrette is Research Scientist within the University of Luxembourg. Expert in the deployment and management of High Performance Computing (HPC) systems, he is leading with Prof. Pascal Bouvry the development of the University's HPC and Big Data platform, as well as the associated core expert team managing and supporting it.

In parallel, he is pursuing his research in the domains of the security and performance of parallel and distributed computing platforms, such as HPC, Cloud Computing or Data Analytics infrastructures. His research contributions led to more than 80 publications in high-level scientific journals, or international conference proceedings while co-authoring 4 books. He has a strong involvement in the community with reviewing roles in impact journals, conferences organization (e.g., IEEE CloudCom) and the participation to more than 50 conference program committee.

Finally, he takes part for the management committee and represents Luxembourg within multiple EU HPC projects, such as [PRACE](#) (acting Advisor), [ETP4HPC](#) or several COST actions. He has also concrete contributions in several strategic projects linked to HPC developed with multiple key decision makers in the Luxembourg context, either from the private sector or at the governmental level. He's also acting as HPC expert for the European Commission in the Enhanced Regional EU-ASEAN Dialogue Instrument (E-READI) program.

TECHNICAL / MANAGEMENT EXPERTISE: High Performance Computing (HPC), Big Data (BD) & Cloud technologies.
Managing cluster-based HPC systems since 2003 (Linux environment)

HPC Team Leader since 2007 (Deputy head, HPC for Research)

MAIN RESEARCH DOMAINS: Security and Evaluation of Distributed Computing Platforms

Relevant contributions per domains:

Crash/cheating faults tolerance [[74](#), [73](#), [69](#), [88](#), [65](#), [26](#), [51](#), [41](#), [35](#)]

Code Obfuscation [[53](#), [52](#)] , Secure IaaS Cloud [[59](#), [77](#), [25](#)]

Perf. & Energy efficiency of HPC/Cloud platforms [[68](#), [63](#), [55](#), [47](#), [43](#), [40](#), [33](#), [31](#)]

Education

2007	PH.D. IN COMPUTER SCIENCE, with honours (<i>Excellent/Outstanding</i>) University of Luxembourg (UL) & Institut National Polytechnique de Grenoble (INPG) Thesis: <i>Security in Large Scale Distributed Systems: Authentication and Result Checking</i> Advisors: Franck Leprévost (UL) & Jean-Louis Roch (INPG)
2003	M.SC. IN COMPUTER SCIENCE (Univ. de Grenoble, France) with honours (<i>TB/First Class</i>) Speciality: Cryptology, Security and Information Coding (CSCI), rank: 1st
2003	MASTER'S DEGREE IN ENGINEERING (Telecoms ENSIMAG , Grenoble) with honours (<i>B/2.1</i>) Speciality: Applied Mathematics, Computer Sciences & Telecommunications rank: top 10%

Employment

2007 – now	RESEARCH SCIENTIST (UL , Luxembourg)
2004 – 2007	RESEARCH ASSISTANT (UL , Luxembourg)
2003	IT (LAB) AND HPC SYSTEM MANAGER (ID-IMAG , Grenoble, France),

Awards

2018	Best Paper Award, 32 th IEEE Intl. Conf. on Information Networking (ICoin 2018) [31]
2014	Best Student Paper Award, 8 th IEEE Intl. Conf. on Network & System Security (NSS 2014) [41]

Teaching Experience

2019	DATA SCIENCES TRAINING FOR EUROPEAN COMMISSION EMPLOYEES (Digital Pole)	
2014 – now	UL HPC SCHOOLS	https://hpc.uni.lu/hpc-school/
2008 – now	PARALLEL & GRID COMPUTING	Master MICS2 (UL)
2004 – 2007	PROGRAMMING TECHNIQUES I	Bachelor I1/CUT1 (UL)
	ADVANCED PROGRAMMING IN C, C++ AND JAVA	Bachelor I2 (UL)
	SYSTEM ADMINISTRATION AND NETWORK SECURITY	Master CSCI2 (UJF)
2006	CRYPTOLOGY AND NETWORK SECURITY	Master (Univ. of Yaoundé I, Cameroon)

Additional Information

Languages	FRENCH (native language), ENGLISH (fluent) and GERMAN (basic knowledge)
Sports	Karate (Black belt – 3rd DAN, Federal Instructor Diploma (DIF)), Running, Ski...

Graduate Students Supervision

PostDocs.	ALBAN ROUSSET (2016 – 2018)	Large scale parallel simulation for Discrete Element Method
	JOSEPH EMERAS (2014 – 2016)	Workload Analysis and Characterization of HPC Platforms for the Study of Virtualization Service
PhD.	ABDALLAH A.Z.A. IBRAHIM (2017 – 2020)	PRESENCE: Toward a Novel Approach for Performance Evaluation of Mobile Cloud SaaS Web Services
	ABDOUL-WAHID C. MAINASSARA (2017 – 2019)	Large scale parallel simulation for Discrete Element Method
	CHAO LIU (2017 – 2019)	Pricing strategies for cloud brokers at the Software-as-a-Service (SaaS) level
	JAKUB MUSZYŃSKI (2011 – 2015)	Cheating-Tolerance of Parallel and Distributed Evolutionary Algorithms in Desktop Grids and Volunteer Computing Systems
	BENOÎT BERTHOLON (2010 – 2013)	CertiCloud & JShadObf: Toward Integrity and Software Protection in Cloud Computing Platforms
Master	TAZIO GENNUSO (2019)	Analyse de la consommation des ressources des systèmes HPC (ENSIIE)
	SEAN MAHON (2019)	Performance Analysis of Distributed and Scalable Deep Learning (SoHPC)
	CLÉMENT COURAGEUX-SUDAN (2019)	Blockchains environments to support IoT developments
	CLÉMENT PARISOT (2017 – 2019)	Overview and Open Challenges (ENS)
	MAXIME SCHMITT (2014–2015)	System administrator of the UL HPC facility
	SARAH PETER (BORN DIEHL) (2014 –)	RESIF and OpenStack Deployment
	LUDOVIC SCHOEPPS (2014)	System administrator of the UL HPC facility
	ANNA GIANNAKOU (2013)	Design a REST API service to Monitor UL HPC Resources
	VALENTIN PLUGARU (2012 –)	Energy Efficiency in HPC environments
	SÉBASTIEN MARTINEZ (2012)	Energy Efficiency of Hypervisors and Cloud middleware
	FOTIS GEORGATOS (2012 – 2014)	Source Code Obfuscation by mean of Evolutionary Algorithms
	MATEUSZ GUZEK (2011)	System administrator of the UL HPC facility
	BENOÎT BERTHOLON (2009)	System administration of cluster-based HPC systems
	CHRISTOPHE WEIS (2009)	Integrity issues in distributed executions
	DOMINIC DUNLOP (2008 – 2009)	Optimizing hash functions and S-Box by GEP
	ROMAIN CAVAGNA (2007 – 2008)	Using GAs to tune benchmarks for HPCs
Bachelor	DEISLAVA MARINOVA (2018)	Deployment of a GForge platform
	ANTHONY MATHIEU (2016)	Cloud Computing Security
	DERICK A. L. RAMIREZ (2016)	Syslogd and centralized log management
	HYACINTHE CARTIAUX (2011 –)	Energy monitoring on the UL HPC facility
	BERNARD REICHERT (2008)	System administrator of the UL HPC facility
		Collision detection implementation using CUDA

Participation to Ph.D Boards

Oct. 2016	ALBAN ROUSSET, Institut FEMTO-ST, Université de Franche-Comté.	<i>Contribution à la distribution et à la synchronisation des Systèmes Multi-Agents sur les super-calculateurs</i> , Examineur
Sept. 2018	GABRIELE POZZETTI, University of Luxembourg	<i>A dual-grid multiscale approach to CFD-DEM couplings for multiphase flow</i> , Jury member
Dec. 2018	DAVID GUYON, University of Rennes I	<i>Energy-efficient Cloud Elasticity for Data-driven Applications</i> (pending exact title), Jury Member

Research Projects

2007 – now	UL High Performance Computing (HPC) , co-PI (UL cumulative contribution: 20,586,151 €)
2019 - 2022	EU H2020 PRACE 6th Implementation Phase Project (PRACE-6IP)
2014 – 2018	EU COST ACTION IC1305 : Network for Sustainable Ultrascale Computing (NESUS)
2016 – 2019	co-PI, UL LSDEM (UL contribution: 332 k€)
2014 – 2016	AFR PostDoc J. EMERAS (EVALIX; Co-Supervisor; Total/AFR contribution: 56 k€) Workload Analysis & Characterization of HPC Platforms for the Study of Virtualization Service
2011 – 2013	UL EVOPERF (UL contribution: 373 k€)
2010 – 2012	FNR CORE GREENIT (Total: 1,5 M€, FNR contribution: 432 k€)
2010 – 2012	AFR PhD B. BERTHOLON (PHD-09-142; Scientific Advisor; Total/AFR contribution: 110 k€) Confidentiality and Integrity Issues over Cloud Computing Platforms
2009 – 2013	EU COST ACTION IC0804 : Energy efficiency in large scale distributed systems, EU COREGRID
Before 2008	ANR SAFESCALE-BGPR , GRID'5000 (technical committee), FNR-SECOM TESEGRAD, CRYPTALPES , RAGTIME etc.

Professional Development and Recognitions

	IEEE Computer and Computational Intelligence society member
	<i>Autorisation à Diriger des Recherches</i> (ADR), 2019
	Participation to Ph.D Boards: A. Rousset (2016), G. Pozetti (2018), D. Guyon (2018)
	Various editorial responsibilities
	Reviewer for International Projects: National Science Center (Poland)
	Reviewer for several impact journals and international (IEEE, ACM) conferences
	Member of more than 50 international Technical Program Committee,
	Organizer of various conferences, either as <i>general</i> , <i>program</i> or <i>track</i> chair
	UL HPC Manager (Deputy head) and Team leader since 2007.
	Cumulative Project Investment: 20,586,151 € (as of 2019).
	690 computing nodes, 11252 cores, 146GPU accelerators, $R_{\text{peak}} = 1263.322$ TFlops
	201 servers (74,6% are Xen/KVM VMs)
	Shared Storage capacity: 9852.4 TB , over NFS, GPFS/Spectrumscale, Lustre File Systems
	Core HPC Management team: 8 FTEs
2019	EC HPC expert , Enhanced Regional EU-ASEAN Dialogue Instrument (E-READI) program
2019 – now	Advisory board member , Luxembourg Joint Artificial Intelligence (AI) Lab with NVidia
2017 – now	PRACE Management committee : Luxembourg representative (acting <i>advisor</i>) Partnership for Advanced Computing in Europe
2016 – now	Management committee member within ETP4HPC European Technology Platform (ETP) in the area of High-Performance Computing (HPC)
2018 – now	National ICT standardization delegate: ISO/TC 307: Blockchain and DLTs
2016	General Chair , 8th IEEE Intl. Conf. Cloud Computing Technology & Science (CloudCom'16)
2009 – 2018	Delegate representing Luxembourg in EU COST Actions IC1305 and IC0804
2009 – now	HPC Technical advisor for Luxembourg' MECO and SMC Ministries on HPC projects
2007 – now	Manager of various complementary Research Computing / IT services
2006	EGIDE mission for 3 weeks in Cameroon (master lecture – Univ. of Yaoundé I)
2005	EDITORIAL COMMITTEE for the definition of new UL master and bachelor degrees
2005 – 2006	EDITORIAL COMMITTEE, UL website (CMS selection & management)
2005 – 2006	FACULTY COUNCIL, elected member (assistant representative)
2000 – 2002	ENSIMAG JUNIOR ENTERPRISE, developer member

Publications

Publication category	Quantity
Books	6
Magazine	1
Book Chapters	11
Edited Books / Proceedings	1
International journals	8
International conferences with proceedings and reviews	49
(French) national conferences with proceedings and reviews	4
International conferences with reviews (no proceedings)	7
PhD Thesis	1
Masters Thesis	1
Technical Reports and Presentations	37
Miscellaneous / Poster	1
Total:	127

Publish or Perish	Papers:165 Cites/paper: 4.28	Citations:707, Years:15 Cites/author: 166.46	h-index:12 , g-index:23 Papers/author: 43.62	Cites/year: 44.19 Query date: 2019-08-02
Orbi^{1a}	DBLP	Google Scholar		

Books (6)

- [1] J.-G. Dumas, P. Lafourcade, A. Tichit, and S. Varrette. *Les blockchains en 50 questions: comprendre le fonctionnement et les enjeux de cette technologie innovante*. Dunod, 1er edition, September 2018. 296 pages, in French.
- [2] J.-G. Dumas, J.-L. Roch, E. Tannier, and S. Varrette. *Théorie des Codes : Compression, Cryptage et Correction*. Collection Sciences Sup. Dunod, 3rd edition, August 2018. 416 pages, in French.
- [3] J.-G. Dumas, J.-L. Roch, E. Tannier, and S. Varrette. *Foundations of Coding: Compression, Encryption, Error-Correction*. Wiley & Sons, February 2015. 376 pages.
- [4] J.-G. Dumas, J.-L. Roch, E. Tannier, and S. Varrette. *Théorie des Codes : Compression, Cryptage et Correction*. Collection Sciences Sup. Dunod, 2nde edition, March 2014. 384 pages, in French.
- [5] J.-G. Dumas, J.-L. Roch, E. Tannier, and S. Varrette. *Théorie des Codes : Compression, Cryptage et Correction*. Collection Sciences Sup. Dunod, 1st edition, March 2007. 352 pages, in French.
- [6] S. Varrette and N. Bernard. *Programmation avancée en C (avec exercices et corrigés)*. Collection Informatique et Systèmes d'Informations. Hermès, Fev. 2007. 416 pages, in French.

Magazine (1)

- [7] S. Varrette and S. Gautier. Cryptographie et Signatures Électroniques. In *I-mag – Magazine de l'AAE ENSIMAG*, number 37 in Numéro spécial : La sécurité des systèmes d'information numérique, pages 12–19. Association des anciens élèves de l'ENSIMAG, May 2006.

Book Chapters (11)

- [8] P. Bouvry, S. Varrette, M. U. Wasim, A. A.Z.A. Ibrahim, X. Besson, and T. A. Trinh. *Ultrascale Computing Systems*, chapter Security, reliability and regulation compliance in Ultrascale Computing System. IET, October 2018. accepted, pending publication details.
- [9] A.-C. Orgerie and S. Varrette. *Ultrascale Computing Systems*, chapter A Full-Cost Model for Estimating the Energy Consumption of Computing Infrastructures. IET, October 2018. accepted, pending publication details.
- [10] P. Bouvry, G. L. T. Chetsa, G. Da Costa, E. Jeannot, L. Lefèvre, J.-M. Pierson, F. Pinel, P. Stolf, and S. Varrette. *Large-scale Distributed Systems and Energy Efficiency: A Holistic View*, volume 94 of *Wiley Series on Parallel and Distributed Computing*, chapter Energy Efficiency and High-Performance Computing, pages 197–224. John Wiley & Sons, February 2015.
- [11] S. Varrette, P. Bouvry, M. Jarus, and A. Oleksiak. *Handbook on Data Centers*, chapter Energy efficiency in HPC Data Centers: Latest Advances to Build the Path to Exascale. Springer, February 2015.
- [12] B. Bertholon, C. Cérin, C. Coti, J.-C. Dubacq, and S. Varrette. *Distributed Systems (volume 1); Design and Algorithms*, volume 1, chapter Practical Security in Distributed Systems, pages 237–300. Wiley, 2011.
- [13] C. Cérin, J.-C. Dubacq, T. Héroult, R. Keryell, J.-L. Pazat, J.-L. Roch, and S. Varrette. *Systèmes répartis en action : de l'embarqué aux systèmes à large échelle*, chapter Sécurité dans les grilles de calcul, pages 153–180. IC2 Informatique et systèmes d'information. Hermès, November 2008. 184 pages, in French.

- [14] P. Bouvry, J.-G. Dumas, R. Gillard, J.-L. Roch, and S. Varrette. *Sécurité Multimédia: Cryptographie et Sécurité Systèmes et Réseaux*, volume 2 of *Traité IC2 Informatique - Commande - Communication*, chapter Cryptographie à Clé Secrète, pages 23–101. Hermès, Feb 2006. In French.
- [15] J.-G. Dumas, F. Leprevost, J.-L. Roch, V. Savin, and S. Varrette. *Sécurité Multimédia: Cryptographie et Sécurité Systèmes et Réseaux*, volume 2 of *Traité IC2 Informatique - Commande - Communication*, chapter Cryptographie à Clé Publique, pages 103–196. Hermès, Feb 2006. In French.
- [16] J-G Dumas, F. Leprevost, J-L Roch, and S. Varrette. *Sécurité Multimédia: Cryptographie et Sécurité Systèmes et Réseaux*, volume 2 of *Traité IC2 Informatique - Commande - Communication*, chapter Architectures PKI, pages 187–210. Hermès, Feb 2006. In French.
- [17] N. Bernard, Y. Denneulin, and S. Varrette. *Sécurité Multimédia: Cryptographie et Sécurité Systèmes et Réseaux*, volume 2 of *Traité IC2 Informatique - Commande - Communication*, chapter Sécurité UNIX, pages 211–245. Hermès, Feb 2006. In French.
- [18] N. Bernard, Y. Denneulin, and S. Varrette. *Sécurité Multimédia: Cryptographie et Sécurité Systèmes et Réseaux*, volume 2 of *Traité IC2 Informatique - Commande - Communication*, chapter Sécurité Réseau, pages 247–298. Hermès, Feb 2006. In French.

Edited Books / Proceedings (1)

- [19] S. Varrette, P. Bouvry, A. Zomaya, G. Danoy, and S. Gopalakrishnan, editors. *8th IEEE International Conference on Cloud Computing Technology and Science (ClouCom 2016)*, Luxembourg, December 2016. IEEE Computer Society. 583 pages.

International journals (8)

- [20] A. A. Z. A. Ibrahim, M. U. Wasim, S. Varrette, and Pascal Bouvry. PRESENCE: Monitoring and Modelling the Performance Metrics of Mobile Cloud SaaS Web Services. *J. Mobile Information Systems*, 2018(1351386), August 2018. Extended journal version of our IEEE ICoIN 2018 paper.
- [21] M. Bagein, J. Barbosa, V. Blanco, I. Brandic, S. Cremer, S. Fremal, H. Karatza, L. Lefevre, T. Mastelic, A. Oleksiak, A.-C. Orgerie, G.L. Stavrinides, and S. Varrette. Energy Efficiency for Ultrascale Systems: Challenges and Trends from Nesus Project. *Intl. J. on Supercomputing Frontiers and Innovations*, 2(2):105–131, 2015. See <http://superfri.org/superfri/article/view/48>.
- [22] P. Bouvry, R. Mayer, J. Muszyński, D. Petcu, A. Rauber, G. Tempesti, T. Trinh, and S. Varrette. Resilience within Ultrascale Computing System: Challenges and Opportunities from Nesus Project. *Intl. J. on Supercomputing Frontiers and Innovations*, 2(2):46–63, 2015. See <http://superfri.org/superfri/article/view/46>.
- [23] M. Guzek, S. Varrette, V. Plugaru, J. E. Pecero, and P. Bouvry. A Holistic Model of the Performance and the Energy-Efficiency of Hypervisors in an HPC Environment. *Intl. J. on Concurrency and Computation: Practice and Experience (CCPE)*, 26(15):2569–2590, October 2014.
- [24] F. Caldeira, T. Schaberreiter, S. Varrette, E. Monteiro, P. Simões, D. Khadraoui, and P. Bouvry. Trust Based Interdependency Weighting for On-line Risk Monitoring in Interdependent Critical Infrastructures. *Intl. J. of Secure Software Engineering (IJSSE)*, 4(4):47–69, October 2013.
- [25] B. Bertholon, S. Varrette, and P. Bouvry. CertiCloud: une plate-forme Cloud IaaS sécurisée. *Technique et Science informatiques (2012)*, 31(8-10)(2592):1121–1152, December 2012.
- [26] J. Muszyński, S. Varrette, P. Bouvry, F. Seredyński, and S. U. Khan. Convergence Analysis of Evolutionary Algorithms in the Presence of Crash-Faults and Cheaters. *Intl. Journal. of Computers and Mathematics with Applications (CAMWA)*, 64(12):3805–3819, December 2012.
- [27] F. Leprevost, J. Monnerat, S. Varrette, and S. Vaudenay. Generating anomalous elliptic curves. *Information Processing Letters*, 93(5):225–230, March 2005.

International conferences with proceedings and reviews (49)

- [28] A. W. M. Checkaraou, A. Rousset, X. Besseron, S. Varrette, and B. Peters. Hybrid mpi+openmp implementation of extended discrete element method. In *Proc. of the 9th Workshop on Applications for Multi-Core Architectures (WAMCA'18), part of 30th Intl. Symp. on Computer Architecture and High Performance Computing (SBAC-PAD 2018)*, Lyon, France, September 2018. IEEE Computer Society.
- [29] A. A.Z.A. Ibrahim, U. Wasim, S. Varrette, and P. Bouvry. PRESENCE: Performance Metrics Models for Cloud SaaS Web Services. In *Proc. of the 11th IEEE Intl. Conf. on Cloud Computing (CLOUD 2018)*, San Francisco, USA, July 2018. IEEE Computer Society.

- [30] A. A.Z.A. Ibrahim, S. Varrette, and P. Bouvry. On verifying and assuring the cloud SLA by evaluating the performance of saas web services across multi-cloud providers. In *48th Annual IEEE/IFIP Intl. Conf. on Dependable Systems and Networks Workshops (DNS'18)*, pages 69–70, Luxembourg, June 2018. IEEE Computer Society. Extended Abstract.
- [31] A. A.Z.A. Ibrahim, S. Varrette, and P. Bouvry. PRESENCE: Toward a Novel Approach for Performance Evaluation of Mobile Cloud SaaS Web Services . In *Proc. of the 32nd IEEE Intl. Conf. on Information Networking (ICOIN 2018)*, Chiang Mai, Thailand, January 2018. IEEE Computer Society. **Best Paper Award**.
- [32] A. Rousset, A. W. Mainassara Chekaraou, Y. Liao, X. Besseron, S. Varrette, and B. Peters. Comparing Broad-Phase Interaction Detection Algorithms for Multiphysics DEM Applications. In *Proc. of the 15th Intl. Conf. of Numerical Analysis and Applied Mathematics (ICNAAM'17)*, Thessaloniki, Greece, September 2017. American Institute of Physics (AIP)).
- [33] J. Emeras, S. Varrette, and P. Bouvry. Amazon Elastic Compute Cloud (EC2) vs. in-House HPC Platform: a Cost Analysis. In *Proc. of the 9th IEEE Intl. Conf. on Cloud Computing (CLOUD 2016)*, San Francisco, USA, June 2016. IEEE Computer Society.
- [34] J. Emeras, X. Besseron, S. Varrette, P. Bouvry, and B. Peters. HPC or the Cloud: a cost study over an XDEM Simulation. In *Proc. of the 7th International Supercomputing Conference in Mexico (ISUM 2016)*, Puebla, México, April 2016.
- [35] J. Muszyński, S. Varrette, and P. Bouvry. Reducing Efficiency of Connectivity-Splitting Attack on Newscast via Limited Gossip. In *Proc. of the 19th European Event on Bio-Inspired Computation, EvoCOMNET 2016*, LNCS, Porto, Portugal, March 2016. Springer Verlag.
- [36] J. Emeras, S. Varrette, M. Guzek, and P. Bouvry. Evalix: Classification and Prediction of Job Resource Consumption on HPC Platforms. In *Proc. of the 19th Intl. Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP'15), part of the 29th IEEE/ACM Intl. Parallel and Distributed Processing Symposium (IPDPS 2015)*, Hyderabad, India, May 2015. IEEE Computer Society.
- [37] J. Muszyński, S. Varrette, B. Dorronsor, and P. Bouvry. Distributed Cellular Evolutionary Algorithms in a Byzantine Environment. In *Proc. of the 18th Intl. Workshop on Nature Inspired Distributed Computing (NIDISC 2015), part of the 29th IEEE/ACM Intl. Parallel and Distributed Processing Symposium (IPDPS 2015)*, Hyderabad, India, May 2015. IEEE Computer Society.
- [38] X. Besseron, V. Plugaru, A. H. Mahmoudi, S. Varrette, B. Peters, and P. Bouvry. Performance Evaluation of the XDEM framework on the OpenStack Cloud Computing Middleware. In *Proc. of the 4th Intl. Conf. on Parallel, Distributed and Grid Computing for Engineering (PARENG 2015)*, Dubrovnik, Croatia, March 2015. Civil-Comp Press.
- [39] M. Guzek, X. Besseron, S. Varrette, G. Danoy, and P. Bouvry. ParaMASK: a Multi-Agent System for the Efficient and Dynamic Adaptation of HPC Workloads. In *Proc. of the 14th IEEE Intl. Symp. on Signal Processing and Information Technology (ISSPIT'14)*, Noida, India, December 2014. IEEE Computer Society.
- [40] V. Plugaru, S. Varrette, and P. Bouvry. Performance Analysis of Cloud Environments on Top of Energy-Efficient Platforms Featuring Low Power Processors. In *Proc. of the 6th IEEE Intl. Conf. on Cloud Computing Technology and Science (CloudCom'14)*, Singapore, December 2014. IEEE Computer Society.
- [41] J. Muszyński, S. Varrette, J.L. Jiménez Laredo, and P. Bouvry. Exploiting the Hard-wired Vulnerabilities of Newscast via Connectivity-splitting Attack. In *Proc. of the IEEE Intl. Conf. on Network and System Security (NSS 2014)*, volume 8792 of LNCS, pages 152–165, Xi'an, China, October 2014. Springer Verlag. **Best Student Paper Award**.
- [42] V. Plugaru, S. Varrette, and P. Bouvry. Performance tuning of applications in HPC environments employing Simulated Annealing. In *Proc. of the Intl. Conf. on Metaheuristics and Nature Inspired Computing (META'14)*, Sousse, Tunisia, October 2014.
- [43] S. Varrette, V. Plugaru, M. Guzek, X. Besseron, and P. Bouvry. HPC Performance and Energy-Efficiency of the OpenStack Cloud Middleware. In *Proc. of the 43rd Intl. Conf. on Parallel Processing (ICPP-2014), Heterogeneous and Unconventional Cluster Architectures and Applications Workshop (HUCAA'14)*, Minneapolis, MN, US, September 2014. IEEE.
- [44] J. Muszyński, S. Varrette, J.L. Jiménez Laredo, and P. Bouvry. Analysis of the Data Flow in the Newscast Protocol for Possible Vulnerabilities. In *Proc. of Intl. Conf. on Cryptography and Security System (CSS'14)*, volume 448 of *Communications in Computer and Information Sciences (CCIS)*, pages 89–99, Lublin, Poland, September 2014. Springer.

- [45] S. Varrette, P. Bouvry, H. Cartiaux, and F. Georgatos. Management of an Academic HPC Cluster: The UL Experience. In *Proc. of the 2014 Intl. Conf. on High Performance Computing & Simulation (HPCS 2014)*, pages 959–967, Bologna, Italy, July 2014. IEEE.
- [46] B. Bertholon, S. Varrette, and P. Bouvry. Comparison of Multi-objective Optimization Algorithms for the JShadObf JavaScript Obfuscator. In *Proc. of the 17th Intl. Workshop on Nature Inspired Distributed Computing (NIDISC 2014)*, part of the *28th IEEE/ACM Intl. Parallel and Distributed Processing Symposium (IPDPS 2014)*, Phoenix, Arizona, USA, May 2014. IEEE Computer Society.
- [47] S. Varrette, M. Guzek, V. Plugaru, X. Besseron, and P. Bouvry. HPC Performance and Energy-Efficiency of Xen, KVM and VMware Hypervisors. In *Proc. of the 25th Symposium on Computer Architecture and High Performance Computing (SBAC-PAD 2013)*, pages 89–96, Porto de Galinhas, Brazil, October 2013. IEEE Computer Society.
- [48] V. Delplace, P. Manneback, F. Pinel, S. Varrette, and P. Bouvry. Comparing the Performance and Power Usage of GPU and ARM Clusters for Map-Reduce. In *Proc. of the 3rd Intl. Conf. on Cloud and Green Computing (CGC'13)*, pages 199–200. IEEE Computer Society, October 2013.
- [49] T. Schaberreiter, S. Varrette, P. Bouvry, J. Röning, and D. Khadraoui. Dependency Analysis for Critical Infrastructure Security Modelling: A Case Study within the Grid'5000 Project. In *Proc. of the 3th IFIP Intl. SeCIHD'2013 Workshop*, part of the *8th Intl. Conf. on Availability, Reliability and Security (ARES'13)*, volume 8128 of *LNCS*, pages 269–287, Regensburg, Germany, September 2013. Springer Verlag.
- [50] S. Varrette, G. Danoy, M. Guzek, X. Besseron, and P. Bouvry. Using Data-flow analysis in MAS for power-aware HPC runs. In *Proc. of the IEEE Intl. Conf. on High Performance Computing and Simulation (HPCS'13)*, pages 158–160. IEEE Computer Society, July 2013.
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