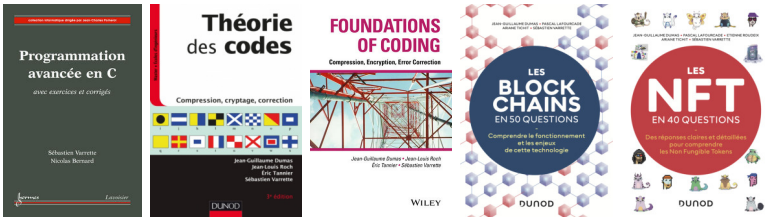
Sebastien VARRETTE, PhD

Research Scientist, Head Research Computing and HPC operations
Management, Security and Performance of HPC systems

Phone: +33(0)6 74 57 90 05
E-mail: Sebastien.Varrette@uni.lu
Home page: http://varrette.gforge.uni.lu
GPG Key ID: 5D08BCDD4F156AD7

Born on November 27th, 1979 (in France)
Married (2004), two children (2007,2010)

Short bio: With more than 15 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 the University's HPC and Big Data platform, and the associated expert team managing and supporting this facility.
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 100 publications in high-level scientific journals, or international conference proceedings while co-authoring 5 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), CASTIEL, 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 (Ex: EuroHPC MeluXina Supercomputer). 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 large-scale HPC and Data analytics systems since 2003 (Linux environment) **HPC Team Leader since 2007** (Head, Uni.lu HPC facility)
Main research domains:	Security and Performance Evaluation of Distributed Computing Platforms *Relevant contributions per domains*: HPC, Perf. & Energy efficiency: [79, 66, 58, 54, 44, 13, 12, 24, 38, 36, 35, 34] Security of Distributed Systems (incl. blockchains): [70, 71, 6, 5, 42, 4, 3, 2, 1] Crash/cheating faults tolerance [85, 84, 80, 99, 76, 31, 62, 52, 46] Code Obfuscation [64, 63] , Secure IaaS Cloud [70, 88, 30]
Books [9, 6, 5, 2, 1]:	

Education

2007	Ph.D. in Computer Science,	with honours (*Excellent/Outstanding*)
	University of Luxembourg (UL) & Institut National Polytechnique de Grenoble (INPG)	
	Thesis: *Security in Large Scale Distributed Systems: Authentication and Result Checking*	
	Advisors: Franck Leprévost (UL) & Jean-Louis Roch (INPG)	
2003	M.Sc. in Computer Science (Univ. de Grenoble, France)	with honours (*TB/First Class*)
	Speciality: Cryptology, Security and Information Coding (CSCI),	rank: 1st
2003	Master's Degree in Engineering (Telecoms ENSIMAG, Grenoble)	with honours (*B/2.1*)
	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, 32th IEEE Intl. Conf. on Information Networking (ICoin 2018)	[42]
2014	Best Student Paper Award, 8th IEEE Intl. Conf. on Network & System Security (NSS 2014)	[52]

Teaching Experience

2021	Trusted Computing paradigms and Distributed Ledger Technologies MTECH (UL)	
2019	Data Sciences Training for European Commission employees (Digital Pole)	
2014 – now	Uni.lu High Performance Computing (ULHPC) Schools https://ulhpc-tutorials.rtfd.io	
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)), Jogging, Ski...

Graduate Students Supervision

PostDocs.	Ezhilmathi Krishnasamy (2019 – 2021)	PRACE-6IP project coordination, advanced HPC/research support
	Emmanuel Kieffer (2019 – 2020)	Bi-level optimization and scalable science
	Alban Rousset (2016 – 2018)	Large scale parallel simulation for Discrete Element Method
	Joseph Emeras (2014 – 2016)	Workload Analysis & Characterization of HPC Platforms
PhD.	Ludovica Paseri (2019 –)	GDPR compliance in Eurorean HPC and Cloud Computing Initiatives
	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 – 2020)	Large scale parallel simulation for Discrete Element Method
	Chao Liu (2017 –)	Pricing strategies for cloud brokers at the Software-as-a-Service (SaaS) level
	Jakub Muszyński (2011 – 2015)	Cheating-Tolerance of Parallel & Distributed Evolutionary Algorithms in Desktop Grids and Volunteer Computing Systems
	Benoît Bertholon (2010 – 2013)	CertiCloud & JShadObf: Toward Integrity & Software Protection in Cloud Computing Platforms
Master	Abatcha Olloh (2020 –)	Infrastructure and HPC Architect Engineer of the UL HPC facility
	Teddy Valette (2020 –)	Infrastructure and HPC Architect Engineer of the UL HPC facility
	Kevin Fornasiero (2020)	Performance evaluation, energy efficiency and automatic testing of accelerated HPC applications
	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)	System administrator of the UL HPC facility
	Maxime Schmitt (2014–2015)	RESIF and OpenStack Deployment
	Sarah Peter (born Diehl) (2014 –)	System administrator of the UL HPC facility
	Ludovic Schoepps (2014)	Design a REST API service to Monitor UL HPC Resources
	Anna Giannakou (2013)	Energy Efficiency in HPC environments
	Valentin Plugaru (2012 –)	Energy Efficiency of Hypervisors and Cloud middleware
	Sébastien Martinez (2012)	Source Code Obfuscation by mean of Evolutionary Algorithms
	Fotis Georgatos (2012 – 2014)	System administrator of the UL HPC facility
	Mateusz Guzek (2011)	System administration of cluster-based HPC systems
	Benoît Bertholon (2009)	Integrity issues in distributed executions
	Christophe Weis (2009)	Optimizing hash functions and S-Box by GEP
	Dominic Dunlop (2008 – 2009)	Using GAs to tune benchmarks for HPCs
	Romain Cavagna (2007 – 2008)	Deployment of a GForge platform
Bachelor	Desislava Marinova (2018)	Cloud Computing Security
	Anthony Mathieu (2016)	Syslogd and centralized log management
	Derick A. L. Ramirez (2016)	Energy monitoring on the UL HPC facility
	Hyacinthe Cartiaux (2011 –)	System administrator of the UL HPC facility
	Bernard Reichert (2008)	Collision detection implementation using CUDA

Participation to Ph.D Boards

Oct. 2016	Alban Rousset, Institut FEMTO-ST, Université de Franche-Comté. *Contribution à la distribution et à la synchronisation des Systèmes Multi-Agents sur les super-calculateurs*, Examinateur
Sept. 2018	Gabriele Pozzetti, University of Luxembourg *A dual-grid multiscale approach to CFD-DEM couplings for multiphase flow*, Jury member
Dec. 2018	David Guyon, University of Rennes I *Energy-efficient Cloud Elasticity for Data-driven Applications* (pending exact title), Jury Member

Research Projects

2007 – now	UL High Performance Computing (HPC), co-PI (UL cumulative contribution: **23,586,151 €**)
2019 – 2022	EU H2020 PRACE 6th Implementation Phase Project (PRACE-6IP)
2016 – 2019	UL LSDEM (Large scale parallel Discrete Element Simulation), co-PI (UL contribution: 332 k€)
2014 – 2018	EU COST Action IC1305 Network for Sustainable Ultrascale Computing (NESUS)
2014 – 2016	AFR PostDoc J. Emeras (Evalix; Co-Supervisor; Total/AFR contribution: 56 k€)
Before 2013	EU COST Action IC0804 Energy efficiency in large scale distributed systems FNR CORE GreenIT, SECOM, TESEGRAD, AFR PhD B. Bertholon, UL EvoPerf ANR SafeScale-BGPR, Grid'5000 (technical committee), CryptAlpes, RagTime etc.

Professional Development and Recognitions

IEEE Computer and Computational Intelligence society member
Autorisation à Diriger des Recherches (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 *general*, *program* or *track* chair

Uni.lu High Performance Computing (HPC) Manager and Team leader since 2007.

Cumulated Facility Capacity: $R_{\mathbf{peak}} = 2794.23$ **TFlops**, Shared Storage capacity: **10713.4 TB**

EU RFP Tender Management:

2019-2021: Aion supercomputer (RFP 190027, Atos/DDN, Budget: **3,5M€**)
2017-2018: Iris supercomputer (RFP 160019,160020,170035,180027, Dell/DDN, Budget: n/a),
2014: Uni.lu Scaled NAS (RFP 140002, Dell/EMC, Budget: n/a),
2011: Gaia supercomputer (RFP 110004, Bull/NexSan, Budget: n/a),

2020 –	**EU CASTIEL HPC Champion** Luxembourg, Training, Twinning, Mentoring
2019 – 2020	**EC HPC expert**, Enhanced Regional EU-ASEAN Dialogue Instrument (E-READI) program
2019 – now	**H2020 PRACE-6IP** (Implementation Phase) **Management board member**, Luxembourg
2019 – 2020	EuroHPC MeluXina Supercomputer Project Consortium (Technical Advisor)
2019 – now	Luxembourg **NVAITC** (NVidia Artificial Intelligence (AI) Tech. Center) **Advisory board member**
2018 – now	Uni.lu IT Advising Committee (ITAC) member
2017 – now	**PRACE** (Partnership for Advanced Computing in Europe) **Management committee** (Advisor)
2016 – now	ETP4HPC (European Technology Platform (ETP) in the area of HPC) Management committee member
2018 – 2020	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 – 2020	**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 Yaoudé 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	9
Magazine	1
Book Chapters	12
Edited Books / Proceedings	1
International journals	9
International conferences with proceedings and reviews	55
(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	45
Miscellaneous / Poster	1
Total:	**146**

Publish or Perish	Papers:188	Citations:1061,Years:18	**h-index:14**	g-index:29
	Cites/year: 55.84	Cites/paper: 5.64	Authors/paper: 3.82	Query date: **2022-02-01**
Orbi[lu]	DBLP	Google Scholar		

Books (9)

[1] J.-G. Dumas, P. Lafourcade, E. Roudeix, A. Tichit, and S. Varrette. *Les NFT en 40 questions: Des réponses claires et détaillées pour comprendre les Non Fungible Tokens*. Hors collection. Dunod, 1er edition, Fev 2022. 256 pages, in French.

[2] 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*. Hors collection. Dunod, 2eme edition, Fev 2022. 304 pages, in French.

[3] 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*. Hors collection. Dunod, 1er(bis) edition, November 2019. 296 pages, in French.

[4] 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*. Hors collection. Dunod, 1er edition, September 2018. 296 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, 3rd edition, August 2018. 416 pages, in French.

[6] J.-G. Dumas, J.-L. Roch, E. Tannier, and S. Varrette. *Foundations of Coding: Compression, Encryption, Error-Correction*. Wiley & Sons, February 2015. 376 pages.

[7] 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.

[8] 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.

[9] 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)

[10] S. Varrette and S. Gautier. Cryptographie et Signatures Eléctoniques. 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 (12)

[11] P. Bouvry, S. Varrette, T. A. Trinh, M. U. Wasim, A. A.Z.A. Ibrahim, and X. Besseron. *Ultrascale Computing Systems*, chapter Security, reliability and regulation compliance in Ultrascale Computing System, pages 65–83. IET, January 2019.

[12] A.-C. Orgerie and S. Varrette. *Ultrascale Computing Systems*, chapter A Full-Cost Model for Estimating the Energy Consumption of Computing Infrastructures, pages 161–176. IET, January 2019.

[13] A. Oleksiak, L. Lefevre, P Alonso, G. Da Costa, V. De Maio, N. Frasheri, V M. Garcia, J. Guerrero, S. Lafond, A. L. Lastovetsky, R. Reddy Manumachu, B. Muite, A.-C. Orgerie, W. Piatek, J.-M. Pierson, R.Prodan, P.Stolf, E. Sheme, and S. Varrette. *Ultrascale Computing Systems*, chapter Energy aware ultrascale systems, pages 127–188. IET, January 2019.

[14] 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.

[15] 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.

[16] 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.

[17] C. Cérin, J.-C. Dubacq, T. Hérault, 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.

[18] P. Bouvry, J.-G. Dumas, R. Gillard, J.-L. Roch, and S. Varrette. *Sécurité Multimédia: Cryptographie et Sécurité Systèmes et Réseaux*, volume 2 of *Traités IC2 Informatique - Commande - Communication*, chapter Cryptographie à Clé Secrète, pages 23–101. Hermès, Fev 2006. In French.

[19] J.-G. Dumas, F. Leprevost, J.-L. Roch, V. Savin, and S. Varrette. *Sécurité Multimédia: Cryptographie et Sécurité Systèmes et Réseaux*, volume 2 of *Traités IC2 Informatique - Commande - Communication*, chapter Cryptographie à Clé Publique, pages 103–196. Hermès, Fev 2006. In French.

[20] J-G Dumas, F. Leprevost, J-L Roch, and S. Varrette. *Sécurité Multimédia: Cryptographie et Sécurité Systèmes et Réseaux*, volume 2 of *Traités IC2 Informatique - Commande - Communication*, chapter Architectures PKI, pages 187–210. Hermès, Fev 2006. In French.

[21] N. Bernard, Y. Denneulin, and S. Varrette. *Sécurité Multimédia: Cryptographie et Sécurité Systèmes et Réseaux*, volume 2 of *Traités IC2 Informatique - Commande - Communication*, chapter Sécurite UNIX, pages 211–245. Hermès, Fev 2006. In French.

[22] N. Bernard, Y. Denneulin, and S. Varrette. *Sécurité Multimédia: Cryptographie et Sécurité Systèmes et Réseaux*, volume 2 of *Traités IC2 Informatique - Commande - Communication*, chapter Sécurité Réseau, pages 247–298. Hermès, Fev 2006. In French.

Edited Books / Proceedings (1)

[23] 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 (9)

[24] J. Emeras, S. Varrette, V. Plugaru, and P. Bouvry. Amazon elastic compute cloud (ec2) versus in-house hpc platform: A cost analysis. *IEEE Trans. Cloud Computing*, 7(2):456–468, April 2019.

[25] 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.

[26] 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.

[27] 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.

[28] 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.

[29] 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.

[30] 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.

[31] 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.

[32] 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 (55)

[33] E. Kieffer, G. Duflo, G. Danoy, S. Varrette, and P. Bouvry. A RNN-based Hyper-heuristic for combinatorial problems. In *Proc. of 22nd European Conf. on Evolutionary Computation in Compbinatorial Optimisation (EvoCOP*22)*, Lecture Notes in Computer Science (LNCS). Springer International Publishing, April 2022.

[34] S. Varrette, E. Kieffer, F. Pinel, E. Krishnasamy, S. Peter, H. Cartiaux, and X. Besseron. RESIF 3.0: Toward a Flexible & Automated Management of User Software Environment on HPC facility. In *ACM Practice and Experience in Advanced Research Computing (PEARC'21)*, Virtual Event, July 2021. Association for Computing Machinery (ACM).

[35] L. Paseri, S. Varrette, and P. Bouvry. Protection of Personal Data in High Performance Computing Platform for Scientific Research Purposes. In *Proc. of the EU Annual Privacy Forum (APF) 2021*, volume 12703 of *Lecture Notes in Computer Science (LNCS)*, pages 123–142, Online Event, June 2021. Springer International Publishing.

[36] S. Mahon, S. Varrette, V. Plugaru, F. Pinel, and P. Bouvry. Performance Analysis of Distributed and Scalable Deep Learning. In *20th IEEE/ACM Intl. Symp. on Cluster, Cloud and Internet Computing (CCGrid'20)*, pages 760–766, Melbourne, Australia, May 2020. IEEE/ACM.

[37] F. Pinel, J.-X. Yin, C. Hundt, E. Kieffer, S. Varrette, P. Bouvry, and S. Lee. Evolving a Deep Neural Network Training Time Estimator. In *3rd Intl. Conf. on Optimization and Learning (OLA'20)*, volume 1173 of *Communications in Computer and Information Science (CCSI)*, pages 13–24, Cadiz, Spain, February 2020. Springer Verlag.

[38] S. Varrette, F. Pinel, E. Kieffer, G. Danoy, and P. Bouvry. Automatic Software Tuning of Parallel Programs for Energy-Aware Executions. In *Proc. of 13th Intl. Conf. on Parallel Processing and Applied Mathematics (PPAM 2019)*, LNCS, Bialystok, Poland, 2019. Springer Verlag. Publication expected to appear in 2020.

[39] 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.

[40] 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)*, pages 936–940, San Francisco, USA, July 2018. IEEE Computer Society.

[41] 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.

[42] 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)*, pages 50–55, Chiang Mai, Thailand, January 2018. IEEE Computer Society. **Best Paper Award**.

[43] 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)).

[44] 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. Acceptance Rate: 15%.

[45] 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.

[46] 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.

[47] 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.

[48] J. Muszyński, S. Varrette, B. Dorronsorro, 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.

[49] 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)*, volume CCP.90-8, Dubrovnik, Croatia, March 2015. Civil-Comp Press.

[50] 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.

[51] 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. Acceptance rate: 54/301 = 0,179 %.

[52] 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**.

[53] 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.

[54] 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.

[55] 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.

[56] 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.

[57] 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.

[58] 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.

[59] 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.

[60] 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.

[61] 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.

[62] J. Muszynski, S. Varrette, and P. Bouvry. Expected Running Time of Parallel Evolutionary Algorithms on Unimodal Pseudo-Boolean Functions over Small-World Networks. In *Proc. of the IEEE Congress on Evolutionary Computation (CEC'2013)*, pages 2588–2594, Cancún, Mexico, June 2013. IEEE.

[63] B. Bertholon, S. Varrette, and P. Bouvry. JShadObf: A JavaScript Obfuscator based on Multi-objective Optimization Algorithms. In *Proc. of the IEEE Intl. Conf. on Network and System Security (NSS 2013)*, volume 7873 of *LNCS*, pages 336–349, Madrid, Spain, June 2013. Springer Verlag.

[64] B. Bertholon, S. Varrette, and S. Martinez. ShadObf: A C-source Obfuscator based on Multi-objective Optimization Algorithms. In *Proc. of the 16th Intl. Workshop on Nature Inspired Distributed Computing (NIDISC 2013), part of the 27th IEEE/ACM Intl. Parallel and Distributed Processing Symposium (IPDPS 2013)*, pages 435–444, Boston (Massachusetts), USA, May 2013. IEEE Computer Society.

[65] M. Guzek, S. Varrette, V. Plugaru, J. E. Sanchez, and P. Bouvry. A Holistic Model of the Performance and the Energy-Efficiency of Hypervisors in an HPC Environment. In *Proc. of the Intl. Conf. on Energy Efficiency in Large Scale Distributed Systems (EE-LSDS'13)*, volume 8046 of *LNCS*, pages 133–152, Vienna, Austria, April 2013. Springer Verlag.

[66] M. Jarus, S. Varrette, A. Oleksiak, and P. Bouvry. Performance Evaluation and Energy Efficiency of High-Density HPC Platforms Based on Intel, AMD and ARM Processors. In *Proc. of the Intl. Conf. on Energy Efficiency in Large Scale Distributed Systems (EE-LSDS'13)*, volume 8046 of *LNCS*, pages 182–200, Vienna, Austria, April 2013. Springer Verlag.

[67] J. Muszyński, S. Varrette, J. L. Jimenez Laredo, B. Dorronsoro, and P. Bouvry. Convergence of Distributed Cellular Evolutionary Algorithms in Presence of Crash Faults and Cheaters. In *Proc. of the Intl. Conf. on Metaheuristics and Nature Inspired Computing (META'12)*, Sousse, Tunisia, October 2012.

[68] S. Varrette, J. Muszyński, and P. Bouvry. Hash function generation by means of Gene Expression Programming. In *Proc. of Intl. Conf. on Cryptography and Security System (CSS'12)*, Kazimierz Dolny, Poland, September 2012. Annales UMCS ser. Informatica.

[69] C. J. Barrios Hernandez, D. A. Sierra, S. Varrette, and D. Lopez Pacheco. Energy Efficiency on Scalable Computing Architectures. In *11th IEEE Intl. Conf. on Computer and Information Technology (CIT'11)*, pages 635–640, Paphos, Cyprus, September 2011. IEEE Computer Society.

[70] B. Bertholon, S. Varrette, and P. Bouvry. CertiCloud: a Novel TPM-based Approach to Ensure Cloud IaaS Security. In *Proc. of the 4th IEEE Intl. Conf. on Cloud Computing (CLOUD 2011)*, pages 121–130, Washington DC, USA, July 2011. IEEE Computer Society. Acceptance Rate: 18% (36/196).

[71] B. Bertholon, S. Varrette, and P. Bouvry. A Signature Scheme for Distributed Executions based on Control flow Analysis. In *Proc. of the 19th Intl. conference on Security and Intelligent Information Systems (SIIS 2011)*, volume 7053 of *LNCS*, pages 85–102, Warsaw, Poland, June 2011. Springer Verlag.

[72] S. Varrette, E. Tantar, and P. Bouvry. On the Resilience of [distributed] Evolutionary Algorithms against Cheaters in Global Computing Platforms. In *Proc. of the 14th Intl. Workshop on Nature Inspired Distributed Computing (NIDISC 2011), part of the 25th IEEE/ACM Intl. Parallel and Distributed Processing Symposium (IPDPS 2011)*, Anchorage (Alaska), USA, May 2011. IEEE Computer Society.

[73] J. Pecero, S. Varrette, and P. Bouvry. Scheduling DAG Applications on Multi-core Processor Packages Architectures. In *Proc. of the Intl. Conf. on Metaheuristics and Nature Inspired Computing (META'10)*, October 2010.

[74] D. Dunlop, S. Varrette, and P. Bouvry. Deskilling HPL - Using an Evolutionary Algorithm to Automate Cluster Benchmarking. In *Proc. of 8th Intl. Conf. on Parallel Processing and Applied Mathematics - Part II (PPAM 2009)*, volume 6068 of *LNCS*, pages 102–114, Wroclaw, Poland, September 2009. Springer Verlag. Publication appeared in 2010.

[75] G. Berhe, B. Peters, S. Varrette, and P. Bouvry. Parallel Implementation of Domain Decomposition Algorithm for Molecular Dynamics. In *Proc. of the 1st Intl. Conf. on Parallel, Distributed and Grid Computing for Engineering (PARENG 2009)*, volume CCP.90-8, Pécs, Hungary, April 2009. Civil-Comp Press.

[76] S. Guelton, T. Gautier, J.-L. Pazat, and S. Varrette. Dynamic Adaptation Applied to Sabotage Tolerance. In *Proc. of the IEEE 17th Euromicro Intl. Conf. on Parallel, Distributed, and Network-Based Processing (PDP 2009)*, pages 237–244, Weimar, Germany, February 2009. IEEE Computer Society.

[77] S. Varrette, M. Ostaszewski, and P. Bouvry. Nature inspired Algorithm-Based Fault Tolerance on Global Computing Platforms. Application to Symbolic Regression. In *Proc. of the Intl. Conf. on Metaheuristics and Nature Inspired Computing (META'08)*, Hammamet, Tunisia, October 2008.

[78] S. Varrette, J.-L. Roch, G. Duc, and R. Keryell. Building Secure Resources to Ensure Safe Computations in Distributed and Potentially Corrupted Environments. In *Proc. of Euro-Par 2008, Workshop on Secure, Trusted, Manageable and Controllable Grid Services (SGS'08)*, volume 5415 of *LNCS*, pages 211–222, Las Palmas de Gran Canaria, Spain, August 2008. Springer Verlag.

[79] D. Dunlop, S. Varrette, and P. Bouvry. On the Use of a Genetic Algorithm in High Performance Computer Benchmark Tuning. In *Proc. of the IEEE Intl. Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS'08)*, pages 105–113, Edinburgh, UK, June 2008. IEEE Xplore.

[80] J.-L. Roch and S. Varrette. Probabilistic Certification of Divide & Conquer Algorithms on Global Computing Platforms. Application to Fault-Tolerant Exact Matrix-Vector Product. In *Proc. of the ACM Intl. Workshop on Parallel Symbolic Computation'07 (PASCO'07)*, pages 88–92, London, Ontario, Canada, July 2007. ACM.

[81] S. Varrette, J.-L. Roch, J. Montagnat, L. Seitz, J.-M. Pierson, and F. Leprévost. Safe Distributed Architecture for Image-based Computer Assisted Diagnosis. In *Proc. of the IEEE Intl. Conf. on Pervasive Services, Workshop on Health Pervasive Systems (HPS'06)*, Lyon, France, June 2006. IEEE Computer Society.

[82] S. Varrette, S. Georget, J. Montagnat, J.-L. Roch, and F. Leprevost. Distributed Authentication in GRID5000. In *Proc. of OTM Confederated Int. Workshops on Grid Computing and its Application to Data Analysis (GADA'05)*, volume 3762 of *LNCS*, pages 314–326, Agia Napa, Cyprus, November 2005. Springer Verlag.

[83] N. Dagorn, N. Bernard, and S. Varrette. Practical Authentication in Distributed Environments. In *Proc. of the IEEE Intl. Computer Systems and Information Technology Conference (ICSIT'05)*, volume 1, Alger, Algeria, July 2005.

[84] A.Krings, J.-L. Roch, S. Jafar, and S. Varrette. A Probabilistic Approach for Task and Result Certification of Large-scale Distributed Applications in Hostile Environments. In *Proc. of the European Grid Conference (EGC2005)*, volume 3470 of *LNCS*, pages 323–333, Amsterdam, Netherlands, February 2005. Springer Verlag.

[85] S. Varrette, J.-L. Roch, and F. Leprevost. FlowCert : Probabilistic Certification for Peer-to-Peer Computations. In *Proc. of the 16th Symposium on Computer Architecture and High Performance Computing (SBAC-PAD 2004)*, pages 108–115, Foz do Iguaçu, Brazil, October 2004. IEEE Computer Society.

[86] S. Varrette, J.-L. Roch, Y. Denneulin, and F. Leprevost. Secure Architecture for Clusters and Grids. In *Proc. of the 2nd Int. Conf. on Critical Infrastructures (CRIS 2004)*, Grenoble, France, October 2004. IEEE.

[87] S. Jafar, S. Varrette, and J.-L. Roch. Using Data-Flow Analysis for Resilence and Result Checking in Peer to Peer Computations. In *Proc. of the 1th Intl. Workshop on Grid and Peer-to-Peer Computing Impacts on Large Scale Heterogeneous Distributed Database Systems (GLOBE'04)*, pages 512–516, Zaragoza, Spain, September 2004. IEEE Computer Society.

(French) national conferences with proceedings and reviews (4)

[88] B. Bertholon, S. Varrette, and P. Bouvry. Certicloud: une plate-forme cloud iaas sécurisée. In *Proc. des 20ème rencontres francophones du parallélisme (RenPar'20)*, St Malo, France, May 2011.

[89] S. Guelton and S. Varrette. Une approche génétique et source à source de l'optimisation de code. In *Proc. des 19ème rencontres francophones du parallélisme (RenPar'19)*, Toulouse, France, September 2009.

[90] S. Varrette, S. Georget, J.-L. Roch, and F. Leprevost. Authentification Distribuée sur Grille de Grappes basée sur LDAP. In *Proc. des 16èmes rencontres francophones du parallélisme (RenPar'16)*, Le Croisic, France, April 2005. ASF - Ecole des Mines de Nantes.

[91] S. Varrette and J.-L. Roch. Certification logicielle de Calcul Global avec dépendances sur grille. In *Proc. des 15èmes rencontres francophones du parallélisme (RenPar'15)*, pages 169–176, La-Colle-Sur-Loup, France, October 2003.

International conferences with reviews (no proceedings) (7)

[92] M. Muszyński, S. Varrette, and P. Bouvry. On the Resilience of the Newscast Protocol in the Presence of Cheaters. In *2014 Grande Region Security and Reliability Day (GRSRD 2014)*, Saarbrücken, Germany, March 2014.

[93] S. Varrette, M. Muszyński, and P. Bouvry. Cheating impact on distributed Evolutionary Algorithms over BOINC computations. In *Proc. of the 19th Intl. conference on Security and Intelligent Information Systems (SIIS 2011)*, Warsaw, Poland, June 2011. Extended Abstract.

[94] B. Bertholon, S. Varrette, and P. Bouvry. TPM-based Approaches to Improve Cloud Security. In *2011 Grande Region Security and Reliability Day (SecDay 2011)*, Trier, Germany, March 2011.

[95] S. Varrette, B. Bertholon, and P. Bouvry. A Signature Scheme for Distributed Executions based on Macro-Dataflow Analysis. In *2nd Intl. Workshop on Remote Entrusting (Re-Trust 2009)*, Riva del Garda, Italy, September 2009.

[96] S. Varrette, J.-L. Roch, and A. Krings. Result Certification Against Massive Attacks in Distributed Computations. In *1th Int. Workshop on Remote Entrusting (Re-Trust 2008)*, Trento, Italy, October 2008.

[97] S. Varrette. Security of Global Computing Platforms: Authentication and Computed Results Integrity. In *Conference on Cryptology and Digital Content Security (CRM 07)*, Barcelona, Spain, May 2007.

[98] S. Varrette, J.-L. Roch, and F. Leprévost. Applicative solutions for safe computations in distributed environments. In *Workshop "Trustworthy Software"*, Saarbrücken, Germany, May 2006. Dagstuhl Research Online Publication Server (DROPS). Version electronique uniquement.

PhD Thesis (1)

[99] S. Varrette. *Sécurité des Architectures de Calcul Distribué: Authentification et Certification de Résultats.* PhD thesis, INP Grenoble and Université du Luxembourg, September 2007. In French.

Masters Thesis (1)

[100] S. Varrette. Sécurisation de calculs pairs à pairs sur une grille de grappes. Rapport de Projet de Fin d'Etude, ENSIMAG, Laboratoire ID-IMAG UMR CNRS/INPG/INRIA/UJF 5132, June 2003. In french.

Technical Reports and Presentations (45)

[101] D. Pleiter, S. Varrette, E. Krishnasamy, E. Özdemir, and M. Pilc. Security in an evolving European HPC Ecosystem. Technical report, PRACE aisbl, October 2021. pdf.

[102] J. Bispo, J.G. Barbosa, P.F. Silva, C. Morales, M. Myllykoski, P. Ojeda-May, M. Bialczak, M. Uchronski, A. Wlodarczyk, P. Wauligmann, E. Krishnasamy, S. Varrette, and S. Lürs. PRACE Best Practice Guide 2021: Modern Accelerators. Technical report, PRACE aisbl, June 2021. pdf.

[103] S. Varrette. Uni.lu hpc annual report 2020. Technical report, University of Luxembourg, 2020.

[104] E. Krishnasamy, S. Varrette, and M. Mucciardi. Edge Computing: An Overview of Framework and Applications. Technical report, PRACE aisbl, February 2021. pdf.

[105] O. W. Saastad, K. Kapanova, S. Markov, C. Morales, A. Shamakina, N. Johnson, E. Krishnasamy, S. Varrette, and H. Shoukourian. PRACE Best Practice Guide 2020: Modern Processors. Technical report, PRACE aisbl, October 2020. pdf.

[106] S. Varrette. Overview and Challenges of the UL HPC Facility at the EuroHPC Horizon. Technical report, University of Luxembourg, 10th High Performance Computing School, Luxembourg, December 2020. www – pdf.

[107] S. Varrette and I. F. Sulaiman. EU-ASEAN High Performance Computing (HPC) Study Expert Mapping of ASEAN policy orientations and related HPC research infrastructures. Technical report, European Union - Enhanced Regional EU-ASEAN Dialogue Instrument" (E-READI), December 2019. Final Report as EU HPC Expert for European Commission / E-READI program.

[108] A. A.Z.A. Ibrahim, S. Varrette, and P. Bouvry. Best Practices for Cloud Migration and Service Level Agreement Compliances. Technical report, Interdisciplinary Centre for Security, Reliability and Trust (SnT), ILNAS, July 2019.

[109] X. Besseron and S. Varrette. High Performance Computing and Big Data analytics in Luxembourg: Overview and Challenges in the EuroHPC horizon. Invited speakers, 6th MVAPICH User Group (MUG'18) Meeting, August 2018. www.

[110] S. Varrette. Luxembourg Proposals for Large Scale Architectures for Data Science. Invited speaker, 2nd Workshop on HPC Collaboration between Europe and Latin America (WHPCEuroLatam), part of ISC High Performance conference (ISC'18), June 2018. www – pdf.

[111] S. Varrette, P. Bouvry, V. Plugaru, S. Diehl, C. Parisot, and H. Cartiaux. Overview and Challenges of the UL HPC Facility at the EuroHPC Horizon. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. www – pdf.

[112] C. Parisot, H. Cartiaux, S. Varrette, V. Plugaru, S. Diehl, and P. Bouvry. UL HPC Tutorial: Getting Started on the Uni.lu HPC platform. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2014. www.

[113] H. Cartiaux, S. Varrette, V. Plugaru, S. Diehl, C. Parisot, and P. Bouvry. UL HPC Tutorial: HPC workflow with sequential jobs. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2014. www.

[114] V. Plugaru, S. Varrette, S. Diehl, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: Advanced Job scheduling with SLURM and OAR. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2017. www.

[115] S. Diehl, S. Varrette, V. Plugaru, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: Building [custom] software with EasyBuild on the UL HPC platform. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2015. www.

[116] V. Plugaru, X. Besseron, S. Varrette, S. Diehl, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: Performance engineering - HPC debugging and profilling. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2015. www.

[117] S. Varrette, V. Plugaru, S. Diehl, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: Parallel computations with OpenMP/MPI. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2014. www.

[118] V. Plugaru, S. Varrette, S. Diehl, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: Multi-Physics workflows: test cases on CFD / MD / Chemistry applications. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2015. www.

[119] V. Plugaru, S. Diehl, S. Varrette, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: Bio-informatics workflows and applications. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2014. www.

[120] C. Parisot, S. Diehl, S. Varrette, V. Plugaru, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: (Advanced) Prototyping with Python. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2017. www.

[121] V. Plugaru, S. Varrette, S. Diehl, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: Basic and Advanced scientific computing using MATLAB. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2014. www.

[122] S. Varrette, V. Plugaru, S. Diehl, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: Big Data Applications (batch, stream, hybrid) with Hadoop and Spark. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2017. www.

[123] A. Ginolhac, J. Emeras, S. Varrette, V. Plugaru, S. Diehl, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: Statistical Computing with R. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. Initial version in 2014. www.

[124] S. Varrette, V. Plugaru, S. Diehl, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: Machine and Deep Learning on the UL HPC Platform. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. www.

[125] V. Plugaru, S. Varrette, S. Diehl, C. Parisot, H. Cartiaux, and P. Bouvry. UL HPC Tutorial: HPC Containers with Singularity. Technical report, University of Luxembourg, 7th High Performance Computing School, Luxembourg, June 2018. www.

[126] P. Bouvry, S. Varrette, V. Plugaru, S. Peter, H. Cartiaux, and C. Parisot. Large-scale research data management: Road to GDPR compliance. Invited speaker, University of Luxembourg, April 2018. www – pdf.

[127] S. Varrette. Next-generation computing and storage at scale. Invited speaker, EU COST action IC1406 cHipSet, Workshop: Accelerating Modelling and Simulation in the Data Deluge Era, Fontainebleau, France, March 2018. www – pdf.

[128] S. Varrette. Tutorial Big Data Analytics: Overview and Practical Examples. Technical report, EU COST NESUS, 3rd NESUS Winter School and PhD Symposium on Data Science and Heterogeneous Computing, Zagreb, croatia, January 2018. See http://nesusws-tutorials-bd-dl.readthedocs.io/.

[129] S. Varrette, P. Bouvry, V. Plugaru, S. Diehl, C. Parisot, and H. Cartiaux. Overview and Challenges of the UL HPC Facility at the EuroHPC Horizon. Technical report, University of Luxembourg, 6th High Performance Computing School, Luxembourg, November 2017. www – pdf.

[130] S. Varrette, P. Bouvry, V. Plugaru, S. Diehl, C. Parisot, and H. Cartiaux. Overview and Challenges of the UL HPC Facility at the Belval & EuroHPC Horizon. Technical report, University of Luxembourg, 5th High Performance Computing School, Luxembourg, June 2017. www – pdf.

[131] S. Varrette. Tutorial Reproducible Research at the Cloud Era: Overview, Hands-on and Open challenges. Technical report, Cloudcom Association, 8th IEEE Intl. Conf. on Cloud Computing Technology and Science (CloudCom 2016), Luxembourg, December 2016. www – pdf. See also http://rr-tutorials.readthedocs.io/.

[132] S. Varrette. IT/Dev[op]s Army Knives Tools for the researcher: a journey from SSH to Git. Technical report, University of Luxembourg, Luxembourg, July 2016. www – pdf.

[133] S. Varrette, P. Bouvry, V. Plugaru, S. Diehl, and H. Cartiaux. Overview and Challenges of the UL HPC Facility at the Belval Horizon. Technical report, University of Luxembourg, 4th High Performance Computing School, Luxembourg, November 2016. www – pdf.

[134] S. Varrette. Introduction to Git and Vagrant. Technical report, University of Luxembourg, 3rd High Performance Computing School, Luxembourg, June 2015. www.

[135] S. Varrette, P. Bouvry, V. Plugaru, S. Diehl, and H. Cartiaux. High Performance Computing (HPC) at UL: Overview (as of 2015) and Usage. Technical report, University of Luxembourg, 3rd High Performance Computing School, Luxembourg, June 2015. www – pdf.

[136] S. Varrette. HPC Performance and Energy Efficiency: Overview and Trends. Invited speaker, SMAI Congress, Les Karellis, Savoie, June 2015. www – pdf.

[137] V. Plugaru, F. Georgatos, S. Varrette, and P.Bouvry. Performance tuning of applications for HPC systems employing Simulated Annealing optimization. Technical report, Univ. of Luxembourg, 2014.

[138] S. Varrette, P. Bouvry, F. Georgatos, and H. Cartiaux. HPC platforms @ UL: Overview (as of 2014) and Usage. Technical report, University of Luxembourg, First High Performance Computing School, Luxembourg, May 2014. www – pdf.

[139] Sébastien Varrette. Programmation de l'algorithme A.E.S. (Advanced Encryption Standard). Technical report, University of Luxembourg, 2005. pdf.

[140] S. Varrette. Programmation de l'algorithme D.E.S. (Data Encryption Standard). Technical report, University of Luxembourg, 2005. pdf.

[141] S. Varrette. Tutorial LaTeX - Comprendre et écrire un document en LaTeX. Technical report, Laboratoire ID-IMAG, Mai 2005. pdf.

[142] S. Varrette. Tutorial d'installation d'un lecteur de cartes à puce usb sous linux. Technical report, Laboratoire ID-IMAG/Université du Luxembourg, Juin 2005. Version 0.1 - a compléter.

[143] S. Varrette. Introduction aux réseaux de tri tolérants aux fautes. Technical report, Laboratoire ID-IMAG, August 2005. Draft version.

[144] S. Varrette. Tutorial OpenLDAP: Installation et configuration, Migration NIS → LDAP dans GRID5000, Sécurisation par SSL et optimisations. Technical report, Laboratoire ID-IMAG, September 2005.

[145] S. Varrette. Tutorial d'installation de la distribution debian. Technical report, Laboratoire ID-IMAG, September 2005. Extrait d'un TP proposé en Master 2 CSCI.

Miscellaneous / Poster (1)

[146] S. Martinez, S. Varrette, and B. Bertholon. Optimisation d'obfuscation de code source au moyen d'algorithmes évolutionnaires multi-objectifs. [Poster] - ComPAS'13, January 2013.