Sebastien VARRETTE, PhD

Research Associate
specialized in Distributed Platforms Security and HPC/Cloud systems.
14 years of experience in Linux HPC systems

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

Technical / Management Expertise:	High Performance Computing (HPC) , Grid, Cluster & Cloud Platforms. I'm administrating cluster-based HPC systems since 2003 (Linux environment) Leader of an expert team of HPC system administrator since 2008.
Main research domains:	Security and Evaluation of Distributed Computing Platforms Relevant contributions per domains: • Code Obfuscation , CertiCloud, a Cloud IaaS secure platform • Crash/cheating faults analysis in grid platforms • Performance & Energy efficiency of HPC/Cloud platforms • Design of the authentication system of Grid'5000 • Developing security awareness by education

Education

2007	Ph.D. in Computer Science, 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)	with honours (*Excellent/Outstanding*)
2003	M.Sc. in Computer Science Speciality: Cryptology, Security and Information Coding (CSCI), Institut National Polytechnique de Grenoble (INPG) & University Joseph Fourier (UJF)	with honours (*TB/First Class*) rank: 1st
2003	Master's Degree in Engineering (Telecoms ENSIMAG) Speciality: Computer Sciences and Telecommunications	with honours (*B/2.1*) rank: top 10%

Graduate Students Supervision

PhD.	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
In addition	More than **11 Master** students successfully (co-)directed, and **2 bachelor** students.

Research Projects

2007 – now	UL HPC, co-PI (UL cumulative contribution: **7,506,558 €**)
2014 – now	EU COST Action IC1305: Network for Sustainable Ultrascale Computing (NESUS)
2016 – 2019	co-PI, UL Lsdem (UL contribution: 332 k€)
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 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
2009 – 2013	EU CoreGrid
2006 – 2008	ANR SafeScale-BGPR (ANR-05-SSIA-0005; ANR contribution: 68 k€)
2005 – now	Grid'5000 (technical committee)
2005 – 2007	FNR-SECOM TeseGrad (FNR contribution: 300 k€)
2004 – 2007	CryptAlpes
2004 – 2006	RagTime (Total: 545 k€, Rhône-Alpes Region contribution: 217 k€)

Publications

Publication category	Quantity
PhD Thesis	1
Books	4
Magazine	1
Book Chapters	9
International journals	7
International conferences with proceedings and reviews	43
(French) national conferences with proceedings and reviews	4
International conferences with proceedings	1
International conferences with reviews	7
Masters Thesis	1
Technical Reports	8
Miscellaneous	1
Total:	**87**

Publish or Perish	Papers:117	Citations:330,Years:13	**h-index:10**,g-index:15	hc-index:8,hI-index:2,78,hI-norm:5	
	Cites/year: 25.38	Cites/paper: 2.95/1.0/0	Cites/author: 113.24	Papers/author: 40.16	Query date: **2016-04-05**
DBLP	Google Scholar				

Selected Publications

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

[2] 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, Oct. 2014.

[3] 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, Dec 2012.

[4] 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, Dec. 15–18 2014. IEEE Computer Society.

[5] 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, Oct 2014. Springer Verlag. **Best Student Paper Award**.

[6] 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)*, Bologna, Italy, July 2014. IEEE.

[7] 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)*, Cancún, Mexico, June 2013. IEEE.

[8] 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)*, Washington DC, USA, July 4–9 2011. IEEE Computer Society.

[9] 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, Sept. 13–16 2009. Springer Verlag. Publication appeared in 2010.

[10] 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 27–28 2007. ACM.