

Jonathan Pastor

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Born on : 05/09/1987 (DD/MM/YYYY)

Citizenship : French

Education and professional experiences

- Since september **R&D engineer**, *Easyvirt*, Nantes.
- 2020 Member of Research and development team. Setting up and extension of the continuous integration platform. Contributions to the *DCscope* software. Development of a module dedicated to the collect and analysis of network communications using the *Netflow* protocol.
- 2017–2020 **Post-doctoral researcher**, *STACK team - IMT Atlantique*, Nantes.
Setting up of the SeDuCe platform, integrated with Grid'5000, which enables to study energetic aspects (electric consumption, thermal aspects and usage of renewable energies using solar panels) of datacenters. Engineer on the Grid'5000 platform in charge of managing clusters located in Nantes, collaborating with the technical committee on software development.
- 2016 **Research engineer**, *Nimbus team*, University of Chicago/Argonne National Laboratory.
Participation to the setting up of the “Chameleon” testbed, and academic Cloud Computing infrastructure, and development of a software that enables the deployment of software clusters on academic Cloud Computing infrastructures based on OpenStack.
- 2012–2016 **Ph.D thesis (computer science)**, *ASCOLA team - École des Mines de Nantes*, Nantes, .
Titre : Contributions to the setting up of a large-scale Cloud Computing infrastructure. Defended on octobre 18th 2016 with the following jury :
 - M. [Mario SÜDHOLT](#), Professor, École des Mines de Nantes, *Président du jury* ;
 - M. [Pierre SENS](#), Professor, LIP6, *Rapporteur* ;
 - M. [Stéphane GENAUD](#), Professor, ENSIIE, *Rapporteur* ;
 - M. [Thierry COUPAYE](#), Directeur de domaine de recherche, Orange Labs, *Examineur* ;
 - M. [Frédéric DESPREZ](#), Directeur de recherche, Université de Grenoble, *Directeur* ;
 - M. [Adrien LEBRE](#), Researcher, INRIA, *Co-directeur* ;
- 2012 **Research internship**, *ASCOLA team - École des Mines de Nantes*, Nantes.
Participation to the development of chemical programming system dedicated to distributed systems.
- 2009–2012 **Engineer degree (Master of science)**, *Ecole des Mines de Nantes*, Nantes, *Génie des systèmes informatiques*.
- 2006–2009 **Bachelor degree**, *Université de Nantes*, Nantes, Spécialité *Computer science*.

Teaching

- 2017–2020 **Teaching assistant in Computer Science Department (DAPI), IMT Atlantique**, Nantes.
Website development based on Python and Javascript (lectures and practical sessions, 2017-2020), supervision of several students projects (2017, 2019)
- 2012–2015 **Teaching assistant in Computer Science Department, École des Mines de Nantes**, Nantes.
Website development based on Python and Javascript (lectures and practical sessions, 2012-2015), databases (practical sessions, 2012), object programming (exercices sessions and practical sessions, 2014), data structures (practical sessions, 2014), Scala (practical sessions, 2013-2014), Javascript (practical sessions, 2013), supervision of several students projects (2013-2015)

Skills

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|-------------------|---|
| Programmation | Python, Bash, C/C++/Arduino, Scala, Java, Arduino |
| Programmation Web | HTML, CSS, Javascript, Bootstrap, Flask, Angular, VueJS |
| Systèmes | Linux, OpenStack, VMware vSphere, Grid'5000, UNIX, MariaDB/MySQL, Redis, RaspberryPI, MacOS |
| English | Fluent |

Awards

- September 2018 **Best paper award**, IARA GREEN 2018, Venise, Italie.
SeDuCe : a Testbed for Research on Thermal and Power Management in Datacenters.
- Juin 2014 **Grid'5000 large-scale challenge, 1er prix**, Grid'5000 Spring school 2014, Ecole normale supérieure de Lyon.
The experiment I designed and conducted, in collaboration with Laurent Pouilloux, won the first prize of the “large-scale” challenge. With this experiment, we demonstrated the scalability of DVMS combined with the Vivaldi algorithm to deploy and schedule dynamically 1700 virtual machines with a dynamic workload on a multi-site infrastructure.

Research Interests

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|----------------------------------|---|
| Cloud Computing | Cloud Computing and Fog/Edge Computing. Infrastructure As A Service (OpenStack, Kubernetes) |
| Energetic aspects in datacenters | electrical consumption, thermal dissipation, renewable energies |
| Distributed systems | geo-distributed systems, large-scale infrastructures, fault tolerance |

Publications

Journals / Book chapters

- [1] Adrien LEBRE et al. “Putting the next 500 vm placement algorithms to the acid test : The infrastructure provider viewpoint”. In : *IEEE Transactions on Parallel and Distributed Systems*. T. 30. 1. IEEE, 2018, p. 204-217.
- [10] Adrien LÈBRE et al. “Beyond The Clouds, How Should Next Generation Utility Computing Infrastructures Be Designed?” In : *Cloud Computing : Challenges, Limitations and R&D Solutions*. Sous la dir. de Zaigham MAHMOOD. Springer, nov. 2014.

International conferences

- [2] Jonathan PASTOR et Jean Marc MENAUD. “SeDuCe : a Testbed for Research on Thermal and Power Management in Datacenters”. In : *26th International Conference on Software, Telecommunications and Computer Networks (SoftCOM), Split, Croatia*. IEEE. 2018.
- [3] Jonathan PASTOR et Jean Marc MENAUD. “SeDuCe : a Testbed for Research on Thermal and Power Management in Datacenters”. In : *GREEN 2018 - Third International Conference on Green Communications, Computing and Technologies, Sep 2018, Venise, Italy. pp.1-6*. IARA. 2018.
- [4] Jonathan PASTOR et Jean Marc MENAUD. “SeDuCe : Toward a testbed for research on thermal and power management in datacenters”. In : *E2DC 2018 - 7th International Workshop on Energy-Efficient Data Centres, Jun 2018, Karlsruhe, Germany*. 2018, p. 513-518.
- [5] Adrien LEBRE et al. “Revising OpenStack to Operate Fog/Edge Computing infrastructures”. In : *IEEE International Conference on Cloud Engineering*. Vancouver, Canada, avr. 2017.
- [6] Kate KEAHEY, Jonathan PASTOR et Maverick. CHARDET. “Publishing Platform for Geospatial Operations”. In : *The Third International Conference on CyberGIS and Geospatial Data Science*. Urbana, United States of America, août 2016.
- [7] Adrien LEBRE, Jonathan PASTOR et Mario SÜDHOLT. “VMPlaceS : A Generic Tool to Investigate and Compare VM Placement Algorithms”. In : *Europar 2015*. Vienne, Austria, août 2015.
- [11] Jonathan PASTOR et al. “Locality-aware Cooperation for VM Scheduling in Distributed Clouds”. In : *Euro-Par 2014*. Porto, Portugal, août 2014.
- [13] Flavien QUESNEL et al. “Advanced Validation of the DVMS Approach to Fully Distributed VM Scheduling”. In : *ISPA ' 13 : The 11th IEEE International Symposium on Parallel and Distributed Processing with Applications*. Melbourne, Australia, juil. 2013.

French conferences

- [9] Jonathan PASTOR. “Vers un gestionnaire IaaS massivement distribuée s’appuyant sur OpenStack”. In : *Conférence d’informatique en Parallélisme, Architecture et Système*. Lille, France, juil. 2015.

Reports

- [8] Adrien LÈBRE, Jonathan PASTOR et . THE DISCOVERY CONSORTIUM. *The DISCOVERY Initiative - Overcoming Major Limitations of Traditional Server-Centric Clouds by Operating Massively Distributed IaaS Facilities*. Research Report RR-8779. Inria Rennes Bretagne Atlantique, sept. 2015, p. 12.
- [12] Adrien LÈBRE et al. *Beyond The Cloud, How Should Next Generation Utility Computing Infrastructures Be Designed ?* Research Report RR-8348. INRIA, juil. 2013.