Colin Leverger

Ph.D. Candidate

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Higher education

2017 - 2020 **Ph.D. candidate**, *INRIA/IRISA, Orange Labs and Services*, Rennes - FRANCE.
Research in the field of Capacity Planning, time series, machine learning, Data Science.
- Work both at INRIA and Orange Labs, respectively under the supervision of Thomas Guyet and Vincent Lemaire.
- Development of Machine Learning algorithms using Pandas, Python, matplotlib, scipy, Jupyter, R, and mining of time series datasets to make forecasts and predictions in the context of infrastructure performances.
- Published 3 papers in national and international conferences.

2019 **Visiting researcher**, *National Institute of Informatics*, Tokyo - JAPAN.
3 months research experience in NII labs at Tokyo. Developed a R Shiny dashboard for displaying massive amount of time series. Wrote one of my published paper. Initiate brand new research collaboration. Laureate of two mobility grants: 'NII International Internship Program' and 'Bourse de mobilité internationale 2019 - Région Bretagne'.

2016 - 2017 **ERASMUS semester**, *Roskilde University*, Roskilde - DENMARK.
6 months abroad, ERASMUS exchange in Denmark for the last academic semester of my Master Degree.
Main subjects: IT-architecture and user driven software design, Security, Big Data, Danish.

2014 - 2017 **Master 2 Degree in Computer Science via an apprenticeship program at a highly selective graduate engineering school**, *E.N.S.S.A.T.*, Lannion - FRANCE.
Curriculum Networking, Multimedia & Computing Science.
Participated to a lot of software development projects, some of those can be found in my web portfolio https://colinleverger.fr
Main subjects: Network Applications, Systems Architecture, Design of Services & of User Interfaces.

2012 - 2014 **Two year Undergraduate University Degree of Technology in Electronics and Computing**, *Université de Rennes 1*, Rennes - FRANCE.
Main subjects: Programming, Microchip, Telecommunication, Digital and Analogic Electronics.

Work experience

2018 **Lab assistant**, *E.N.S.A.I. Engineering School*, Bruz - FRANCE.
33 h as a lab assistant at E.N.S.A.I for master 2 students. Wrote the project subject, where students had to create a CLI application/web scraper in Python 3. Taught 4 groups of 5 students.

2017 - 2018 **Lab assistant**, *Computer Science Department, University of Rennes*, Rennes - FRANCE.
52 h as a lab assistant in University of Rennes 1 for bachelor students. 40 h TP Scala, 14 h TP Web Programmation.

2014 - 2017   **Apprentice Software Engineer**, *Orange Labs and Services*, Rennes - FRANCE.

Apprenticeship to develop software in Scala following a DevOps methodology in a team of 14 Metrology experts.

- Implemented in Java and Scala a tool that crawled REST Maven repositories for creating a local knowledge base of metadata concerning Java libraries (last version, number of versions, etc.)
- Implemented in bash and Scala a software for infrastructure automatic testing. Managed the PHP, Apache and Nginx configuration files automatic discovery and retrieval for both online and offline analysis.
- Used Drools Java lib for creating expert rules for configuration management.
- Participated in the testing of the whole software by designing and writing Scala tests with the ScalaTest library. Use of SBT for version and code management. Used Jenkins to integrate and deploy tests automatically.
- Developed a web interface for displaying continuously integrated and modified expertise rules. Use of various API. Deployed the service on cloud service OpenStack using Ansible automatic scripts.
- Developed a website using the asynchronous Scala Play framework.
- Used testing tools such as Gatling and jmeter to stress infrastructure, in order to maintain the service quality for Orange services.
- Experimented with the ELK stack, Graphana and influxdb for massive log processing. Followed the performances of various servers and collected massive amount of data metrics.
- Developed some Machine Learning algorithms in the Capacity Planning speciality. Developed a PoC with R, Graphana and influxdb for technical and functional data display. Used Ansible and Jenkins for Continuous Integration of the various parts of the framework.
- Used Ansible, Scala, Spark, Elasticsearch, Logstash, Kibana, R, OpenStack, etc. on a daily basis.

2014   **Intern**, *Athlone Institute of Technology*, Athlone - IRELAND.

3 months end-of-course internship; preparation of project subjects for students. Worked with Arduino, Java, HTML/CSS, PHP and C.

Publications

Nov. 2019   **IDEAL 2019 - Main track paper**, *English*, Manchester - UNITED KINGDOM.

Leverger, C., Malinowski, S., Guyet, T., Lemaire, V., Bondu, A., Termier, A. "Toward a framework for seasonal time series forecasting using clustering.", in IDEAL2019.

Sep. 2018   **ECML 2018 - Workshop paper**, *English*, Dublin - IRELAND.

C. Leverger, V. Lemaire, S. Malinowski, T. Guyet and L. Rozé, "Day-ahead time series forecasting : application to capacity planning.", in AALTD workshop ECML 2018.

Jan. 2018   **EGC 2018 - Demo paper**, *French*, Paris - FRANCE.

C. Leverger, R. Marguerie, V. Lemaire, T. Guyet, and S. Malinowski, "PerForecast : un outil de prévision de l'évolution de séries temporelles pour le planning capacitaire.", in EGC 2018, vol. RNTI-E-34, pp.455-458.

2018-2020   **Pair reviewing**, Rennes - FRANCE.

Pair reviewed five articles for the following conferences: KDD 2020, IJCAI 2019, ECAI 2019, ICDM 2018, Conférence Nationale en Intelligence Artificielle (CNIA) 2018.

Personal projects

2014 - 2018   **Coursera MOOCs**, *Coursera*, Internet.

Followed and completed more than 10 MOOCs, including Functional Programming Principles in Scala, Big Data Analysis with Scala and Spark, Introduction to Neurohacking with R, etc. Certificates available upon request.

2014 - 2018   **Systems and Network Engineer**, *On my own*, Rennes - FRANCE.

Management of my dedicated server. Use of Docker to manage virtual services, Jenkins to do some DevOps and deploy automatically, Ansible to script and configure the server. Play with ELK stack and Graphana dashboards for monitoring the services and cyberattacks.

Skills

Language

French	Native
English	Level B2 *(Common European Framework of References for Languages) - Independent user*
Danish	Notions
Japanese	Notions

Computing

Languages	Python, R, Scala, Java, C, HTML/CSS, PHP, JavaScript, Bash/scripting, SQL, NoSQL, LATEX
Paradigms	Functional, imperative, object-oriented, concurrent programming, real-time programming

Tools	Pandas, NumPy, scikit-learn, Keras/Tensorflow, Matplotlib, Jupyter Notebook, R, Shiny, ggplot2, Git, Spark, influxDB, massive grid computing, Khiops coclustering tool @Orange, Jenkins, Ansible, Docker, Spark, ELK, OpenStack, texmaker, IntelliJ, MySQL, mongoDB, xampp, SSH, Neo4j, Gephi, Jmeter, Gatling

Interests and Hobbies

Music	Creation and composition, beatmaking, recording and sound engineering for my own band. We interpret only our original creations, that are available online on streaming services. Intensive use of Ableton 10 and of machines, both for music production and live performances.
Sport	Practice Ashtanga Yoga once a week at an intermediate level. Regular runner. Occasional swimmer.
Kaggle	Improving my data science skills on competitions and challenges on the Kaggle platform.
Code	Several projects, from System Administration on my dedicated server to contributions on Open Source projects (see https://github.com/ColinLeverger for details.)

References

Manager	**Régis Marguerie**, *regis.marguerie@orange.com*, +33 (0)6 07 585 086, manager at Orange.
Supervisor	**Vincent Lemaire**, *vincent.lemaire@orange.com*, +33 (0)2 96 073 107 , Ph.D. supervisor at Orange.
Supervisor	**Thomas Guyet**, *thomas.guyet@irisa.fr*, +33 (0)2 99 847 594, Ph.D. supervisor at INRIA.