

Personal information

Surname(s) / First name(s)

Address(es)

Telephone(s)

Email(s)

Nationality(-ies)

Age

Last Update

Web page

PASSERAT-PALMBACH Jonathan

Imperial College London - Department of Computing,
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+44 798 518 6151

j.passerat-palmbach@imperial.ac.uk

French

30 years old

01/06/2018

<https://jopasser.at>

Current Position

Since 2014

Research Topics

Since 2018

Activities

Education

2010-2013

Title

College

Research laboratory

Advisor

2007-2010

University

Awards

Best Paper Award

Best Scientific Contribution

Grants

iEx.ec DApp challenge

AWS Research grants

Research Associate at Imperial College, London, United Kingdom

Distributed computing

Scientific workflows

Neuroinformatics

Scientific consultant at Donaco Ltd

Donaco is a startup that aims to facilitate online donations. It dynamically embeds a widget in news media articles that recommends relevant charities to the reader and offers a seamless donation experience.

My role is to guide the technical design of the product and steer the research directions of the company. Donaco uses a **contextual recommendation pipeline based on NLP techniques** to suggest relevant content and actions in a web widget.

PhD in Computer Science

Contributions to Parallel Stochastic Simulation: Application of Good Software Engineering Practices to the Distribution of Pseudorandom Streams in Hybrid Monte-Carlo Simulations

Defended on October, 11th 2013

Engineering Doctoral School, Blaise Pascal University, Clermont-Ferrand, France

CNRS - UMR 6158 LIMOS

Prof. David R.C. Hill

Computer Science Engineering Degree at ISIMA (Institut Supérieur d'Informatique, de Modélisation et de leurs Applications) College

With Honours

Blaise Pascal University, Clermont-Ferrand, France

European Simulation and Modeling (ESM) Conference 2011, Guimares, Portugal

Yearly Seminar of the Engineering Doctoral School, Blaise Pascal University, Clermont-Ferrand, France

Received \$20,000 to support the integration of the **iEx.ec computing resources market place** in the OpenMOLE scientific platform

Support the distribution of large scale connectomics experiments using the Human Connectome Project dataset

Conference organisation

- 2016- **BACON:** Workshop on Brain Analysis using COnnectivity Networks, satellite event of **MICCAI**
- 2016 Big Data in Medical Imaging, special session of **ISBI**
- 2015 Symposium on Big Data Initiatives for Connectomics Research, satellite event of the International conference on **Brain Informatics and Health**

Teaching and Scientific Seminars

Teaching

- 2016 **Functional programming in Haskell**
1st YEAR COMPUTING UNDERGRADUATE, IMPERIAL COLLEGE LONDON
- 10h
- 2016 **Introduction to Java**
1st YEAR COMPUTING UNDERGRADUATE, IMPERIAL COLLEGE LONDON
- 10h
- 2010-2013 **EGI Computing Grid labs**
3rd YEAR ISIMA (COMPUTER SCIENCE ENGINEERING SCHOOL)
- 10h
- 2010-2013 **High Performance Computing course**
MRES IN COMPUTER SCIENCE, BLAISE PASCAL UNIVERSITY
- 4h
- 2012-2013 **GPU Computing course**
3rd YEAR ISIMA (COMPUTER SCIENCE ENGINEERING SCHOOL)
- 16h
- 2010-2013 **C++ labs**
2nd & 3rd YEAR ISIMA (COMPUTER SCIENCE ENGINEERING SCHOOL)
- 16h + 16h
- 2010-2011 **Java course**
2nd YEAR ISIMA (COMPUTER SCIENCE ENGINEERING SCHOOL)
- 22h
- 2010-2011 **Software Engineering**
1st YEAR BSC IN COMPUTER SCIENCE, BLAISE PASCAL UNIVERSITY
- 16h
- 2010-13 **UML tutorials**
2nd YEAR ISIMA (COMPUTER SCIENCE ENGINEERING SCHOOL)
- 8h

Recent Supervision

- 2018 **Federated machine learning on medical data using blockchain technology**, Théo Ryffel (MSc student in Computer Science, Imperial College London, UK / École Polytechnique, France)
- 2018 **Off-chain computing: decentralized computing off the Ethereum blockchain**, Karow Maruf (MEng student in Computer Science, Imperial College London, UK)
- 2016 **Executing software containers in HPC environments: application to Docker containers in the OpenMOLE workflow engine**, Vincent Hage (MSc student in Computer Science, Imperial College London, UK / École des Mines de St-Étienne, France)
- 2016 **Cloud computing for big data experiments**, Adrian Draghici (MEng student in Computer Science, Imperial College London, UK)
- 2015 **Machine Learning for Load Balancing of workflows in heterogeneous distributed computing environments**, Hoel Kervadec (4th year student in Computer Science, INSA Rennes, France)

Scientific Tutorials

- 2015 **Model Exploration Using OpenMOLE - a workflow engine for large scale distributed design of experiments and parameter tuning**, Tutorial at the IEEE High Performance Computing and Simulation Conference, Amsterdam, the Netherlands
- 2012 **How to Correctly Deal With Pseudorandom Numbers in Manycore Environments - Application to GPU programming with Shoverand**, Tutorial at the IEEE High Performance Computing and Simulation Conference, Madrid, Spain

Scientific Talks

- 2017 **Building an ecosystem of functional libraries for the OpenMOLE scientific platform: from batch jobs to automatic model parameter tuning**, ScalaX bytes, London, UK
- 2016 **GridScale: a Journey from Object-Oriented to (More) Functional Programming**, Scala eXchange, London, UK
- 2014 **Invited lecture on software engineering**, University of Pardubice, Czech Republic
- 2013 **How to Correctly Handle Pseudorandom Numbers on GPU Using Shoverand**, NVIDIA's GPU Technology Conference, San Jose, California, USA

Skills

Languages

English (fluent), French (mother tongue)

Computer Science

Programming Languages C, C++, Java, CUDA, Scala, Bash Shell Scripts
Software Engineering Tools Git, CMake, Maven, Valgrind, GDB, Puppet, Salt, SBT
Operating System GNU Linux (Debian/Ubuntu)
Job Schedulers EMI, PBS/Torque, Slurm
Distributed Filesystems Ceph, GlusterFS

Sport

Karate Distinguished athlete (national and international medallist)
Member of the England National A Squad
Black Belt (4th dan)
Professional instructor degree

Selected Publications

Complete list available at
[https://orcid.org/
0000-0003-3178-9502/print](https://orcid.org/0000-0003-3178-9502/print)

Peer-reviewed journal papers

- [1] Jonathan Passerat-Palmbach, Romain Reuillon, Mathieu Leclaire, Antonios Makropoulos, Emma C. Robinson, Sarah Parisot, and Daniel Rueckert.
Reproducible large-scale neuroimaging studies with the openmole workflow management system.
Frontiers in Neuroinformatics, 11:21, 2017.
- [2] Sarah Parisot, Salim Arslan, Jonathan Passerat-Palmbach, William M. Wells III, and Daniel Rueckert.
Group-wise parcellation of the cortex through multi-scale spectral clustering.
NeuroImage, 136:68 – 83, 2016.
- [3] Jonathan Passerat-Palmbach, Jonathan Caux, Pierre Schweitzer, Pridi Siregar, Claude Mazel, and David R. C. Hill.
Harnessing aspect oriented programming on GPU: application to warp-level parallelism (WLP).
The International Journal of Computer Aided Engineering and Technology, 7:158–175, 2015.
- [4] Jonathan Passerat-Palmbach, Claude Mazel, and David R. C. Hill.
TaskLocalRandom: a statistically sound substitute to pseudorandom number generation in parallel java tasks frameworks.
Concurrency and Computation: Practice and Experience, 2014.
doi:10.1002/cpe.3214.

Book chapters

- [5] Jonathan Passerat-Palmbach and David R. C. Hill.
OpenCL: a suitable solution to simplify and unify high performance computing developments.
In *Patterns for Parallel Programming on GPUs*, pages 189–209. Saxe-Coburg Publications, Stirlingshire, Scotland, frederic magoules edition, 2013.
to be published in GPU Design Patterns (ISSN 1759-3158).

Peer-reviewed Proceedings of International Conferences

- [6] Romain Reuillon, Mathieu Leclaire, and Jonathan Passerat-Palmbach. Model Exploration Using OpenMOLE - a workflow engine for large scale distributed design of experiments and parameter tuning. In *IEEE High Performance Computing and Simulation conference 2015*, pages 1–8, Amsterdam, Netherlands, jun 2015. IEEE.
- [7] Lisa M Koch, Martin Rajchl, Tong Tong, Jonathan Passerat-Palmbach, Paul Aljabar, and Daniel Rueckert. Multi-atlas segmentation as a graph labelling problem: Application to partially annotated atlas data. In *International Conference on Information Processing in Medical Imaging*, pages 221–232. Springer, 2015.
- [8] Sarah Parisot, Salim Arslan, Jonathan Passerat-Palmbach, William M Wells III, and Daniel Rueckert. Tractography-driven groupwise multi-scale parcellation of the cortex. In *International Conference on Information Processing in Medical Imaging*, pages 600–612. Springer, 2015.
- [9] Sarah Parisot, Martin Rajchl, Jonathan Passerat-Palmbach, and Daniel Rueckert. A continuous flow-maximisation approach to connectivity-driven cortical parcellation. In *International Conference on Medical Image Computing and Computer-Assisted Intervention*, pages 165–172. Springer, 2015.
- [10] Romain Reuillon, Mathieu Leclaire, and Jonathan Passerat-Palmbach. Model exploration using openmole - a workflow engine for large scale distributed design of experiments and parameter tuning. In *Proceedings of the IEEE High Performance Computing and Simulation conference*, pages 1–8, 2015.
- [11] Jonathan Passerat-Palmbach, Mathieu Leclaire, Romain Reuillon, Zehan Wang, and Daniel Rueckert. OpenMOLE: a Workflow Engine for Distributed Medical Image Analysis. In *International Workshop on High Performance Computing for Biomedical Image Analysis (part of MICCAI 2014)*, Boston, United States, September 2014.
- [12] Jonathan Passerat-Palmbach, Claude Mazel, and David R. C. Hill. ThreadLocalMRG32k3a: a statistically sound substitute to pseudorandom number generation in parallel java applications. In *Proceedings of the IEEE High Performance Computing and Simulation conference*, pages 543–550, 2012.
(nominated for the outstanding paper award).
- [13] Jonathan Passerat-Palmbach, Jonathan Caux, Pridi Siregar, and David R. C. Hill. Warp-level parallelism: Enabling multiple replications in parallel on GPU. In *Proceedings of the European Simulation and Modeling Conference 2011*, pages 76–83, 2011.
ISBN: 978-90-77381-66-3 **(best paper award).**