

HadrienCroubois

PhD Student and Scientist Consultant

Contact

15 rue Delandine 🏠
69002 Lyon, France

+33 4 72 04 31 11 📞

+33 6 24 23 75 53 📱

hadrien.croubois@ens-lyon.fr 📧

hadrien.croubois@iex.ec 📧

hadriencroubois.com 🖥️

<https://github.com/Amxx> 📄

Languages

French native

English fluent

Japanese notions

Spanish notions

Computer Skills

C/C++, Python, OCaml </>

HTML5/CSS, PHP 📄

Javascript (jQuery) 📄

PostgreSQL, SPARQL 📄

Bitcoin & Ethereum blocchains 📄

Usage of L^AT_EX and GNU/Linux 📄

Hobbies

Trekking, Mountaineering 🌲

Climbing, Skiing 🌲

Cinema, Photography 📷

Architecture 🏠

Travelling 🌍

Experience

Since 2017

Scientist Consultant

Iexec, Lyon, France

Algorithm & Blockchain scientific consultant in charge of the design and evaluation of the Proof-of-Contribution algorithms.

2014–2015

Research scholar

Argonne National Laboratory, Illinois, USA

Soft error detection for resiliency management at workflow level.

The Decaf project aims at providing flexible and efficient pipeline management for futur exa-scale infrastructures. As part of the Decaf resiliency layer, I study mechanisms that could provide result validation meta data to conform the pipeline management system with expectations in the domain of trust and validation.

Protecting results against all forms of corruption and ensuring trustworthiness are becoming more important. While previous work focuses on application-specific detectors, the dataflow manager in our current work in the Decaf project aims to have an efficient generic mechanism. We address those issues using new replication patterns that rely on the use of an auxiliary method and an external learning observer. We focused our work on both building theoretical validation mechanisms and deploying different usecases where we were able to detect silent data corruption.

Feb.–Jul. 2014

Research internship.

LIRIS, Lyon, France

Realistic real time rendering for mobile augmented reality.

Development of an augmented reality framework for mobile devices. This framework enables applications to acquire the ambient lightning using the rear camera while rendering a 3D object and integrating it to the scene. The pipeline developed includes a new rendering method for rendering materials with variable specularly (and soft shadows) using an dynamic envmap in real time.

May–Aug. 2013

Research internship.

JFLI - Tokyo University, Tokyo, Japan

LibGridRPCDM, a GridRPC compliant meta-datamanager for the grid.

Implementation of a library allowing transparent calls to multiple grid middlewares (DIET and NINF) using the GridRPC API and fully qualified URI's. This library also provides a GridRPCDM compliant modular meta-datamanager with modules for Dagda, iRODS, rsync, ssh, torrent and webdav communications.

Oct.–Dec. 2012

Software development.

École Normale Supérieure de Lyon, Lyon, France

Development of "MDMA", an augmented reality software for gestures based MIDI device and software control. <http://graa1.ens-lyon.fr/mdma>

Jun.–Jul. 2012

Research internship.

IXXI, Lyon France

Study of twitter dynamic topology graph in relation with the use of Hashtags.

Development of a Qt application performing real time acquisition of filtered tweets (using Twitter and Datasift APIs) and reconstructing a dynamic graph of the relations between users. Data is then exported for analysis using Gephi.

Education

- since 2015 **PhD** in Computer Science École Normale Supérieure de Lyon, Lyon, France
Topic: Autonomous workflow management systems on cloud
Laboratory: Laboratoire de l'Informatique du Parallélisme (LIP)
Advisor: Eddy Caron
- 2013–2014 **Master 2** in Computer Science Université Claude Bernard Lyon I, Lyon, France
Speciality: Image
- 2012–2013 **Master 1** in Computer Science École Normale Supérieure de Lyon, Lyon, France
Speciality: Theoretical Computer Science
- 2011–2012 **Licence** in Computer Science École Normale Supérieure de Lyon, Lyon, France
Speciality: Theoretical Computer Science
- 2009–2011 **“Classes préparatoires”** in Science Lycée St-Louis, Paris, France
Speciality: Mathematics & Computer Science

Diploma and distinctions

- Oct. 2014 **Master diploma** magna cum laude
Field: Computer science
Speciality: Image processing
From: Université Claude Bernard Lyon I, Lyon, France
- Mars 2014 **TOEIC**
955/990, International Professional Proficiency
- Sep. 2012 **Licence diploma** (equivalent to Bachelor) magna cum laude
Field: Computer science
Speciality: Theoretical computer science
From: Université Claude Bernard Lyon I, Lyon, France
- Avr. 2010 **Honourable Mention** in the French national selection for IPhO
International Physics Olympiads
- Juin 2009 **Scientific high school diploma** summa cum laude
Speciality: Mathematics

Teaching

- 2016–2017 **Teaching Assistant** École Normale Supérieure de Lyon, Lyon, France
Image (M1), Distributed systems (M1)
- Dec. 2016 **Intern supervision** École Normale Supérieure de Lyon, Lyon, France
Supervision of a high school student during his internship.
- 2015–2016 **Teaching Assistant** École Normale Supérieure de Lyon, Lyon, France
System architecture (L3), Parallel algorithms (M1), Distributed systems (M1)
- 2013–2014 **Pascal workclasses** in “Classes préparatoires” Lycée Saint-Just, Lyon France
Introduction to algorithms for economics students (ECS)
- 2012–2013 **Cam-light workclasses** for “Classes préparatoires” Lycée du parc, Lyon France
Advanced introduction to algorithms for science students (MP)

Publications

Articles in peer-reviewed journal

Self-adaptive density estimation of particle data

Peterka, Tom and Croubois, Hadrien and Li, Nan and Rangel, Steve and Cappello, Franck,
Submitted to SIAM Journal on Scientific Computing SISC Special Section on CSE15: Software and Big Data
(2015) pp. 1–20. 2015

Standardized Multi-protocol Data Management for Grid and Cloud GridRPC Frameworks

Caniou, Yves and Croubois, Hadrien and le Mahec, Gaël,
Data Management in Cloud, Grid and P2P Systems. *Lecture Notes in Computer Science 8648 (2014) pp. 61–72. Springer International Publishing, 2014*

International conferences

Communication aware task placement for workflow scheduling on DaaS-based Cloud

Caron, Eddy and Croubois, Hadrien,
Workshop PDCO 2017. Parallel / Distributed Computing and Optimization, 2017, Orlando, FL. USA

National conferences

Étude pour la conception d'une architecture autonome et collaborative de gestion de workflow sur infrastructure dynamique

Croubois, Hadrien
Compas, poster session, 2016