Adrien **Ghosn**

PhD student in Computer Science

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Education

Ecole Polytechnique Federale de Lausanne(EPFL)

Lausanne, Switzerland

Computer Science Engineering — *Sep. 2010 - PRESENT*

- 2016 – Present: PhD in Datacenter System Laboratory, supervised by Prof. Edouard Bugnion
- 2013 – 2016: Master Degree, Foundations of Software specialization (avg 5.75/6)
- 2010 – 2013: Bachelor Degree

Northeastern University(NEU)

Boston, U.S.A.

Master Thesis — *Sep. 2015 - Mar. 2016*

- Supervised by Prof. Jan Vitek in the Programming Languages Laboratory

Carnegie Mellon University(CMU)

Pittsburgh, U.S.A.

Exchange Year in Bachelor Degree in Computer Science — *Aug. 2012 - Jul. 2013*

- Dean's list School of Computer Science for QPA > 3.75/4

Skills

Programming C/C++, Java, Scala, Go, Shell scripting, asm, Python, Haskell, JavaScript

Tools & Others Linux Kernel, OS design, Model Based System Design, Compilers & PL design, Theoretical Computer Science, Concurrent & Distributed algorithms, TCP/IP networking, IT Security, Cryptography, Relational Databases, OpenStreet Map, Google/Twitter's APIs, Hadoop, Spark, Map/Reduce, HTML & CSS, Tomcat, git, svn, vim

Research

Ongoing Research

Lausanne, Switzerland

EPFL, DCSL — *Aug. 2017 - Present*

- Modern system-oriented programming languages, software security, integrity, and confidentiality in Cloud deployments, Intel SGX

Light-Weight Contexts in Dune

Lausanne, Switzerland

EPFL, DSCL — *Sep. 2016 - Jul. 2017*

- Allow processes to create and switch among different address spaces in a virtualized environment and experimented with loading/copying optimizations yielding a 5x improvement over fork.
- Intel VTX, Dune, Virtualization, Kernel module, Virtual Memory Management

Efficient Runtime Deoptimization for R(Master Thesis)

Boston, U.S.A.

Northeastern University — *Sep. 2015 - Mar. 2016*

- Implemented an assumption-based optimizer for an R JIT compiler to remove performance bottlenecks inherent to the language, while preserving semantics at runtime.
- On-stack replacement, assumption-based compiler optimizations, runtime deoptimization, R, LLVM, JIT compilers

Aperiodic-Event Support in FASA

Baden, Switzerland

ABB Corporate Research — *Feb. 2015 - Aug. 2015*

- Supervised by Dr. Manuel Oriol
- Fixed-priority servers, data-driven events, real-time control applications, kernel design, dynamic linking/loading & software updates, pi-calculus

Scalameta: AST Persistence & Obey: Code Health

Lausanne, Switzerland

EPFL, LAMP — *Jan. 2014 - Feb. 2015*

- Supervised by Prof. Martin Odersky & Dr. Eugene Burmako
- Obey: Scala compiler plugin that allows to automatically correct & reformat scala source code at compile time to enforce user-defined rules, adapt to library API changes, or comply with a different Scala compiler.
- AST Persistence: Designed & implemented a new format to store compressed typed abstract syntax trees along scala binaries to resolve compiler version incompatibilities and code/maccros expansion in IDEs.

Projects

Operating Systems & Design 15-410 *CMU*

Undergraduate *Jan. 2013 - Jul. 2013*

- Implementation of a x86 Unix like Kernel in C and ASM. The project required to design and implement the thread library, the virtual memory, the drivers for the display, keyboard and clock, the system calls and an efficient scheduler

Tweet Aggregator *EPFL*

Graduate *Jan. 2014 - Jul. 2014*

- Big Data web application that gathers and displays real-time tweets according to user-defined keywords. The application gives a fine-grained filtering of tweets according to zoom-level and selected geographical areas. The project evolved into crossstream.ch

Compiler & Advanced Compiler *EPFL*

Graduate *Sep. 2013 - Jul. 2014*

- Design & implementation of compilers for Java & Lisp-like languages, with optimiyation phases including DCE-CSE, constant folding, closure hoisting, and the full implementation of a mark & sweep garbage collector.

Personnal

Languages Fluent in French & English, notions in Italian & Roumanian.

Extra-curricular

- TA in Introduction to C Programming (2016,2017)
- TA in Concurrent Programming (2015)
- Student Volunteer at ECOOP (2016)

Hobbies

- Crossfit
- Krav Maga
- Skateboarding & Surfing
- Drawing & Painting