

# 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

### EPFL, DCSL

Lausanne, Switzerland

ONGOING RESEARCH

Aug. 2017 - Present

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

### EPFL, DSCL

Lausanne, Switzerland

LIGHT-WEIGHT CONTEXTS IN DUNE

Sep. 2016 - Jul. 2017

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

### Northeastern University

Boston, U.S.A.

EFFICIENT RUNTIME DEOPTIMIZATION FOR R(MASTER THESIS)

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

### ABB Corporate Research

Baden, Switzerland

APERIODIC SUPPORT IN FASA

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

### EPFL, LAMP

Lausanne, Switzerland

SCALAMETA: AST PERSISTENCE & OBEY: CODE HEALTH

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.

## Extracurricular Activity

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### B10S (B1t On the Security, Underground hacker team)

S.Korea

CORE MEMBER

Nov. 2011 - PRESENT

- Gained expertise in penetration testing areas, especially targeted on web application and software.
- Participated on a lot of hacking competition and won a good award.
- Held several hacking competitions non-profit, just for fun.

### WiseGuys (Hacking & Security research group)

S.Korea

MEMBER

Jun. 2012 - PRESENT

- Gained expertise in hardware hacking areas from penetration testing on several devices including wireless router, smartphone, CCTV and set-top box.
- Trained wannabe hacker about hacking technique from basic to advanced and ethics for white hackers by hosting annual Hacking Camp.

### PoApper (Developers' Network of POSTECH)

Pohang, S.Korea

CORE MEMBER & PRESIDENT AT 2013

Jun. 2010 - PRESENT

- Reformed the society focusing on software engineering and building network on and off campus.
- Proposed various marketing and network activities to raise awareness.

### PLUS (Laboratory for UNIX Security in POSTECH)

Pohang, S.Korea

MEMBER

Sep. 2010 - Oct. 2011

- Gained expertise in hacking & security areas, especially about internal of operating system based on UNIX and several exploit techniques.
- Participated on several hacking competition and won a good award.
- Conducted periodic security checks on overall IT system as a member of POSTECH CERT.
- Conducted penetration testing commissioned by national agency and corporation.

### MSSA (Management Strategy Club of POSTECH)

Pohang, S.Korea

MEMBER

Sep. 2013 - PRESENT

- Gained knowledge about several business field like Management, Strategy, Financial and marketing from group study.
- Gained expertise in business strategy areas and insight for various industry from weekly industry analysis session.

## Honors & Awards

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### INTERNATIONAL

2014	<b>Finalist</b> , DEFCON 22nd CTF Hacking Competition World Final	Las Vegas, U.S.A
2013	<b>Finalist</b> , DEFCON 21st CTF Hacking Competition World Final	Las Vegas, U.S.A
2011	<b>Finalist</b> , DEFCON 19th CTF Hacking Competition World Final	Las Vegas, U.S.A
2012	<b>6th Place</b> , SECUINSIDE Hacking Competition World Final	Seoul, S.Korea

### DOMESTIC

2015	<b>3rd Place</b> , WITHCON Hacking Competition Final	Seoul, S.Korea
2013	<b>Silver Prize</b> , KISA HDCON Hacking Competition Final	Seoul, S.Korea
2013	<b>2nd Award</b> , HUST Hacking Festival	S.Korea
2010	<b>3rd Award</b> , HUST Hacking Festival	S.Korea
2012	<b>3rd Award</b> , Holyshield 3rd Hacking Festival	S.Korea
2011	<b>2nd Award</b> , Holyshield 3rd Hacking Festival	S.Korea
2011	<b>5th Place</b> , PADOCON Hacking Competition Final	Seoul, S.Korea

## Presentation

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### 6th CodeEngn (Reverse Engineering Conference)

Seoul, S.Korea

PRESENTER FOR <DEFCON 20TH : THE WAY TO GO TO LAS VEGAS>

Jul. 2012

- Introduced CTF (Capture the Flag) hacking competition and advanced techniques and strategy for CTF

### 6th Hacking Camp - S.Korea

S.Korea

PRESENTER FOR <METASPLOIT 101>

Sep. 2012

- Introduced basic procedure for penetration testing and how to use Metasploit

## Writing

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### A Guide for Developers in Start-up

FOUNDER & WRITER

*Facebook Page*

*Jan. 2015 - PRESENT*

- Drafted daily news for developers in Korea about IT technologies, issues about start-up.

### AhnLab

UNDERGRADUATE STUDENT REPORTER

*S.Korea*

*Oct. 2012 - Jul. 2013*

- Drafted reports about IT trends and Security issues on AhnLab Company magazine.

## Program Committees

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2013 **Organizer & Co-director**, 1st POSTECH Hackathon

*S.Korea*

2012 **Staff**, 7th Hacking Camp

*S.Korea*

2012 **Problem Writer**, 1st Hoseo University Teenager Hacking Competition

*S.Korea*

2012 **Staff & Problem Writer**, JFF(Just for Fun) Hacking Competition

*S.Korea*