


## INFORMAZIONI PERSONALI



## Coppa Emilio

 (Italia)

 <http://ecoppa.github.io/>

## TITOLO DI STUDIO

Dottorato di ricerca in Informatica (Sapienza Università di Roma) -  
Laurea Magistrale in Ingegneria Informatica (Sapienza Università di  
Roma)

ESPERIENZA  
PROFESSIONALE

01/2016–alla data attuale

**Assegnista di ricerca post-dottorale**

Dipartimento di Ingegneria informatica automatica e gestionale Antonio Ruberti della Sapienza  
Università di Roma, Roma (Italia)

Argomento di ricerca: program analysis, dynamic analysis, static analysis, symbolic execution,  
distributed systems.

Contesto applicativo: big data systems, security, performance.

02/2016–alla data attuale

**Assistente alla didattica universitaria**

Sapienza Università di Roma, Roma (Italia)

Tutor dei corsi:

- 2015/2016 Fondamenti di Informatica II da 12 CFU. Esame diviso in due moduli: Algoritmi e struttura  
dati (Prof. Fabrizio D'Amore), Progettazione Software (Giuseppe De Giacomo).

- 2016/2017 Sistemi di Calcolo I da 6CFU.

11/2012–10/2015

**Dottorato di Ricerca in Informatica**

Dipartimento di Informatica, Sapienza Università di Roma, Roma (Italia)

■ Advisor: Prof. Irene Finocchi ([finocchi@di.uniroma1.it](mailto:finocchi@di.uniroma1.it))

■ Votazione: Ottimo

■ Titolo della tesi: Input-sensitive performance analysis of software systems

■ Data conseguimento titolo: 14/12/2015

07/2016

**Docente presso il Master Universitario di II livello in Data Intelligence e Strategie  
Decisionali**

Dipartimento di Statistica, Sapienza Università di Roma, Roma (Italia)

Docente per il corso sui Big Data Systems

04/2015–08/2015

**Visitatore del gruppo di ricerca del Prof. Patrick Eugster**

TU Darmstadt, Darmstadt (Germania)

ISTRUZIONE E FORMAZIONE

10/2010–08/2012 **Laurea Magistrale in Ingegneria Informatica**  
 Sapienza Università di Roma, Roma (Italia)

- Corsi erogati in lingua inglese
- Votazione: 110 e lode / 110
- Percorso di Eccellenza
- Media voti: 29.60 / 30
- Titolo della tesi: Input-Sensitive Profiling
- Relatore: Prof. Camil Demetrescu (demetres@dis.uniroma1.it)
- Data conseguimento: 18/10/2012

10/2007–09/2010 **Laurea Triennale in Ingegneria Informatica**  
 Sapienza Università di Roma, Roma (Italia)

- Media voti: 26.7 / 30
- Votazione: 110 / 110
- Titolo della tesi: Adaptive Allocators
- Relatore: Camil Demetrescu (demetres@dis.uniroma1.it)
- Data conseguimento: 24/09/2010

06/2012 **Esame di Stato per l'Abilitazione all'esercizio della professione di Ingegnere dell'informazione**  
 Sapienza Università di Roma, Roma (Italia)

06/2007 **Maturità Scientifica**  
 Liceo scientifico Plinio Seniore, Roma (Italia)

COMPETENZE PERSONALI

Lingua madre italiano

Altre lingue	COMPRENSIONE		PARLATO		PRODUZIONE SCRITTA
	Ascolto	Lettura	Interazione	Produzione orale	
inglese	B2	C1	B2	B2	C1

Livelli: A1 e A2: Utente base - B1 e B2: Utente autonomo - C1 e C2: Utente avanzato  
 Quadro Comune Europeo di Riferimento delle Lingue

**Competenze comunicative** Ottime competenze comunicative acquisite durante gli anni di dottorato di ricerca e le esperienze di didattica all'università

**Competenze professionali**

- **Algorithms:** Advanced knowledge of algorithms and data structures and their mathematical analysis.
- **Programming:** Advanced knowledge of C, Python, and Java. Good experience with x86 assembly, C++, Scala, and PHP.
- **Operating systems:** Very good experience with GNU/Linux (especially Gentoo-based and

Debian-based), Mac OS, Microsoft Windows.

- **Frameworks:** Apache Hadoop ([hadoop.apache.org/](http://hadoop.apache.org/)), Apache Spark ([spark.apache.org/](http://spark.apache.org/)), Apache Flink ([flink.apache.org/](http://flink.apache.org/)), Intel PIN ([software.intel.com/en-us/articles/pintool/](http://software.intel.com/en-us/articles/pintool/)), Valgrind ([valgrind.org/](http://valgrind.org/)), angr (<https://github.com/angr/angr>).
- **Other:** Advanced experience with Microsoft Office suite, Open/LibreOffice suite, LATEX e Adobe Creative Suite.

Patente di guida B

## ULTERIORI INFORMAZIONI

### Pubblicazioni

- H-index: 3 (Scopus), 3 (Google Scholar)
- 2015. **Emilio Coppa**, Irene Finocchi. On data skewness, stragglers, and MapReduce progress indicators. 2015 ACM Symposium on Cloud Computing (SoCC'15), pp 139-152. DOI: 10.1145/2806777.2806843
- 2015. **Emilio Coppa**. An interactive visualization framework for performance analysis. EAI Endorsed Transactions on Ubiquitous Environments, 15(7), pp e5.
- 2014. **Emilio Coppa**, Camil Demetrescu, and Irene Finocchi. Input-Sensitive Profiling. IEEE Transactional on Software Engineering (IEEE TSE'14), 40(12), pp 1185-1205. DOI: 10.1109/tse.2014.2339825
- 2014. **Emilio Coppa**. An interactive visualization framework for performance analysis. 8th International Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS'14), pp 159-164. DOI: 10.4108/icst.valuetools.2014.258172
- 2014. **Emilio Coppa**, Camil Demetrescu, Irene Finocchi, and Romolo Marotta. Estimating the Empirical Cost Function of Routines with Dynamic Workloads. 12th IEEE/ACM International Symposium on Code Generation and Optimization (CGO'14), pp 230-239. DOI: 10.1145/2544137.2544143
- 2012. **Emilio Coppa**, Camil Demetrescu, and Irene Finocchi. Input-Sensitive Profiling. 33rd ACM SIGPLAN conference on Programming Language Design and Implementation (PLDI'12), pp 89-98. DOI: 10.1145/2254064.2254076

### Presentazioni e seminari

- 2016. Hadoop internals. Lecture in the Big data computing course, Department of Computer Science, Sapienza University of Rome.
- 2016. Amazon Web Services, S3 and Elastic MapReduce. Lecture in the Big data computing course, Department of Computer Science, Sapienza University of Rome.
- 2015. On data skewness, stragglers, and MapReduce progress indicators. Presentation at ACM SoCC 2015, Hawaii, USA.
- 2015. Performance analysis at scale. Invited talk at TU Darmstadt, Germany.
- 2014. An interactive visualization framework for performance analysis. Presentation at VALUETOOLS 2014.
- 2014. Hadoop: design and implementation. Lecture in the Big data computing course, Department of Computer Science, Sapienza University of Rome.
- 2014. Estimating the Empirical Cost Function of Routines with Dynamic Workloads. Presentation at CGO 2014.
- 2013. Introduction to dynamic program analysis and performance profiling. Lecture in the Algorithm engineering course, Department of Computer and System Sciences, Sapienza University of Rome.
- 2013. From asymptotics to performance profiling (and back). Invited talk, Department of Informatics, University of Bergen, Norway.
- 2013. One Minute Madness presentation at the SIGPLAN Programming Languages Mentoring Workshop (PLMW 2013).
- 2012. Input Sensitive Profiling. Presentation at PLDI 2012.

- 2012. Performance profiling: classical and novel techniques. Lecture in the Algorithm engineering course, Department of Computer Science, Sapienza University of Rome.

#### Corsi post-laurea

- 2016. ECOOP Summer School 2016. Rome, Italy. Lecturers: Matthias Felleisen, Carl Friedrich Bolz, Laurence Tratt, Shriram Krishnamurthi, Tomas Kalibera, Jan Vitek, Jeremy Siek, and Jade Alglave.
- 2014. ECOOP Summer School 2014. Uppsala University, Sweden. Lecturers: Joe G. Politz, Shriram Krishnamurthi, Anil Madhavapeddy, RichardMortier, Laurence Tratt, Tomas Kalibera, and Cristina V. Lopes.
- 2014. UPMARK Multicore Computing Summer School 2014. Uppsala University, Sweden. Lecturers: Cormac Flanagan, Stephen Freund, ViktorKlang, Simon M. Smith, and Viktor Vafeiadis.
- 2013. C++ For C Programmers, Coursera. Prof. Ira Pohl, University of California, Santa Cruz.
- 2013. MADALGO PhD Summer School 2013, Summer school on Data Structures.Aarhus University, Denmark. Lecturers: Valerie King, Ian Munro, Rasmus Pagh, and the Turing Award recipient Robert E. Tarjan.
- 2012. Advanced course on GPU computingCineca/Caspur Research Center, Rome.

#### Conferenze

- 2016. European Conference on Object-Oriented Programming (ECOOP'16), Rome, Italy.
- 2016. Dagstuhl Seminar 16111 "Rethinking Experimental Methods in Computing", Dagstuhl, Germany.
- 2015. ACM Symposium on Cloud Computing (SoCC'15), Hawaii, USA.
- 2014. European Conference on Object-Oriented Programming (ECOOP'14), Uppsala, Sweden.
- 2014. International Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS'14), Bratislava, Slovakia.
- 2014. IEEE/ACM International Symposium on Code Generation and Optimization (CGO'14), Orlando, USA.
- 2013. Bertinoro Workshop on Algorithms and Data Structures. Workshop (ADS'13) co-organized by Giuseppe F. Italiano, Andrew V. Goldberg, Valerie King, and Robert E.Tarjan.
- 2013. ACM SIGPLAN-SIGACT Symposium on Principles on Programming Languages (POPL'13), Rome, Italy.
- 2012. ACM SIGPLAN conference on Programming Language Design and Implementation (PLDI'12), Beijing, China.
- 2011. Bertinoro Workshop on Algorithms and Data Structures. Workshop (ADS'11) co-organized by Camil Demetrescu, Andrew V. Goldberg, Valerie King, and Robert E.Tarjan.

#### Attività di referaggio

- 2015. JEA - ACM Journal of Experimental Algorithmics.
- 2015. ECOOP - European Conference on Object-Oriented Programming (subreviewer).
- 2014. ALENEX - Algorithm Engineering and Experimentation.
- 2014. ECOOP - European Conference on Object-Oriented Programming (subreviewer).
- 2013. ALENEX - Algorithm Engineering and Experimentation.
- 2012. ALENEX - Algorithm Engineering and Experimentation.

#### Organizzazione conferenze

- 2016. ECOOP - European Conference on Object-Oriented Programming. Publicity Chair.
- 2016. ECOOP - European Conference on Object-Oriented Programming. Member of Poster Session Committee.
- 2015. ECOOP - European Conference on Object-Oriented Programming. Member of the Artifact Evaluation Committee.
- 2014. ECOOP - European Conference on Object-Oriented Programming. Member of the Artifact Evaluation Committee.

## Riconoscimenti e premi

- 2015. Best PhD Student Paper Award. Department of Computer Science, Sapienza University of Rome.
- 2015. Grant Avvio alla Ricerca 2015. Grant from Sapienza University of Rome.
- 2015. Scholarship award by ACM to attend SoCC 2015. Grant to attend the 2015 ACM Symposium on Cloud Computing as a student co-author of an accepted paper.
- 2014. Scholarship award by ACM/IEEE to attend CGO 2014. Grant to attend the 12th IEEE/ACM International Symposium on Code Generation and Optimization as a student co-author of an accepted paper.
- 2013. Excellent graduate student award. Award from the Alumni Noi Sapienza Association, accorded to students with outstanding performances in academic activities.
- 2013. Scholarship award by ACM to attend POPL 2013. Grant to attend the ACM SIGPLAN Programming Languages Mentoring Workshop and POPL 2013.
- 2012. Scholarship award by Sapienza University of Rome. Grant awarded to students enrolled in the Excellence Path Program in order to support their research activities.
- 2012. ACM SIGPLAN PAC Award to attend PLDI 2012. Grant by the SIGPLAN Professional Activities Committee (PAC) to attend PLDI 2012 as a student co-author of an accepted paper.
- 2010 - 2012. Enrolled in the Excellence Path Program of the M.Sc. in Engineering in Computer Science. Research program for students with outstanding academic performance at Sapienza University of Rome.
- 2011. Scholarship award by Sapienza University of Rome to attend ADS 2011. Grant to attend the 5th Bertinoro Workshop on Algorithms and Data Structures, awarded to students with outstanding academic performance.

## Software

- 2011 - 2015. Aprof: Asymptotic Profiler. A Valgrind tool for performance profiling designed to help developers discover hidden asymptotic inefficiencies in the code. Chief developer. Project website: <https://github.com/ercoppa/aprof>
- 2014. Documentation of Hadoop 2.3.0 internals. Project website: <http://ercoppa.github.io/HadoopInternals/>
- 2011. BSA++, an adaptive segregated fit memory allocator. The allocator has been integrated in the DC dataflow constraint programming framework available at <https://code.google.com/archive/p/dc-lib/> and described in the paper "Reactive imperative programming with dataflow constraints" by C. Demetrescu, I. Finocchi, and A. Ribichini, OOPSLA 2011.

## Progetti finanziati

**Progetto per avvio ricerca dottorandi 2016**

- Titolo progetto: Performance prediction of big data analytics applications
- Ente/Istituzione finanziatrice: Sapienza Università di Roma/Ministry of Education, Universities and Research (MIUR)
- N. protocollo: 0054907 del 26/07/2016, 190549
- Periodo attività: 07/2016-07/2017
- Nominativo coordinatore del progetto: Emilio Coppa

**Progetto per avvio ricerca dottorandi 2015**

- Titolo progetto: Progress analysis and performance prediction for big data analytics applications
- Ente/Istituzione finanziatrice: Sapienza Università di Roma/Ministry of Education, Universities and Research (MIUR)
- N. protocollo: 0051276 del 30/07/2015, C26N15T29Z
- Periodo attività: 07/2015-07/2016
- Nominativo coordinatore del progetto: Emilio Coppa

## Trattamento dei dati personali

Autorizzo la pubblicazione ai sensi del D.Lgs n. 33/2013 "Riordino della disciplina riguardante gli

obblighi di pubblicità, trasparenza e diffusione di informazione da parte delle pubbliche amministrazioni" e acconsento all'utilizzo delle informazioni ivi contenute ai sensi D.L. n. 196/2003 "Codice in materia di protezione dei dati personali".