

# Renato Riccio

## Software Engineer



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## Education

<b>Master of Science</b>	MSc in Computer Science Engineering <b>mark 110/110 cum laude</b>
2011	University of Naples "Federico II" (Italy)
<b>Erasmus</b>	Erasmus in Computer Science Engineering
2009	Aalborg University (Denmark)
<b>Bachelor</b>	Bachelor degree in Computer Science Engineering <b>mark 110/110 cum laude</b>
2008	University of Naples "Federico II" (Italy)

## Main Skills and Experience

- **MongoDB**
  - [MongoDB for Developers certificate](#)
  - [MongoDB for DBAs certificate](#)
- **C, C++**
- **Agile Environment**
- **Python, Perl, Bash Scripting**
- **SQL**
- **Linux system admin experience**
- **DevOps skills**
- **Docker knowledge**
- **Basic Knowledge of front-end technologies: JavaScript, Angular JS, HTML**

## Summary

Technology addicted, and in love with the open source movement philosophy. Applying the same religion at work, thinking that communication and sharing are the keys of every successful project. Optimization maniac always trying to get the best from every system. I keep myself updated on the latest technologies and methodologies, sharing my knowledge and learning from others experiences.

## Languages

	Reading	Writing	Verbal		Reading	Writing	Verbal
English	Excellent	Excellent	Excellent	Spanish	Excellent	Excellent	Excellent
French	Excellent	Good	Excellent	Italian	Mother tongue		

## Employment History

Mar-2014	Present	Amadeus IT Nice	Software Engineer
Nov-2011	Feb-2014	Astek consultant at Amadeus IT Nice	Software Engineer
Feb-2011	Jul-2011	Universidad Politécnica de Madrid	Intern
Sep-2007	Apr-2008	CINI laboratory of Federico II University of Naples	Researcher

## Amadeus IT - Nice (France)

Duration: Nov-2011 to present

Role: **Software Engineer at Technical Data Services team**

Missions:

➤ Community duty:

- Operative member on MongoDB JIRA: new features proposal, bug reporting, exchange of ideas.
- Committed member of MongoDB community in Amadeus.
- Part of Python standardization process inside Amadeus.
- Attended several conferences, sharing the acquired knowledge through the internal community.
- Alpha tester of the new building infrastructure (Jenkins, SonarSource).

➤ Cloud Migration:

Responsibilities:

- Proof of concept, deploy our internal architecture in [Google Compute Engine](#) using [Docker](#).
- Production deployment in [Amazon Web Services](#) with [OpenShift v3](#).

Used: [Docker](#), [Kubernetes](#), [OpenShift v3](#), [vagrant](#), [Terraform](#).

➤ Migrate an existing in-house flight cache system to MongoDB:

Responsibilities:

- Proof of concept, determinate if MongoDB fitted our needs.
- Working on high-end production servers (300Gb of RAM, 32 CPUs, 3T FusionIO cards per server).
- Working with virtual machines in a distributed test environment.
- Use of Docker for building a Python package deployable on heterogeneous environments.
- On call for production incidents.
- Determinate the limit of the new architecture and performance measures (read/write transaction speed, IO throughput, memory consumption), tuning at hardware, file system and OS level.
- Develop of a set of tools for managing MongoDB in production through OpsManager REST API.
- Plan the migration to the new system with no service disruption and providing high availability.
- Provide a MongoDB API wrapper to the business level.

Used: [MongoDB](#), C++, C, [Python](#), [pymongo](#).

Tools: vmstat, perf, valgrind, gdb, Bitbucket, Git, Jira, LINUX (Suse), MongoDB Ops Manager, [Doxygen](#), [Jenkins](#).

➤ Migrate an existing in-house full in memory flight cache to an hybrid architecture SSD+memory:

Responsibilities:

- Design of the db architecture: data storage based on an open-source key-value store library ([LMDB](#)) and on top of that an in-house index infrastructure stored in memory.
- Define a suit of integrated test for the new architecture (to run via Jenkins job).
- System tuning for facing the extremely high IO throughput that the application is generating.
- Performance tuning, and develop of several new design solutions that allowed to save 80% of space and speed up the write transaction of about 40%.
- On call for production incidents.
- Working on high-end servers (750Gb of RAM, 40 CPUs, 6T FusionIO cards per server).
- Design and development of a technical monitor infrastructure providing live production alerts.

Used: C++, C, [Python](#), shm, [AngularJS](#), [NVD3](#), [Flask](#), [SQLite](#), [Flex](#) (lexical analyzer), [LMDB](#).

Tools: iotop, strace, valgrind, gdb, perf, Stash, Git, Jira, LINUX (Suse), [Jenkins](#).

➤ Develop an in-house flight cache manager:

Responsibilities:

- Work closely with Ops in order to smoothly connect the cache manager to the existing environment.
- Provide quality monitor infrastructure for the flight price cache.
- Profile the component and find alternative design solution for reducing the huge amount of memory used.

Used: [Python](#), [Numpy](#), [Scipy](#), [SQLite](#), HTML, [Dygraphs library](#).

Tools: svn, gdb.