Nicolò Martini
Senior Software Engineer - London
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PROFILE

An experienced senior software engineer with a strong maths background.
I have been working professionally mainly with dynamic languages, and playing in my free time with functional ones, mainly Scala, sometimes Haskell.
I decided to move to Scala because I think that type-safety and referential transparency are both great modeling tools and must-have qualities for enterprise software.
I have a strong interest in type systems and program languages design, and I like to experiment with advanced FP concepts (functors, monads, free structures) both in Scala and in Maths .
I like to explore the correlation between type systems, logic and set theory.

EDUCATION

Master Degree in Mathematics (Magna cum Laude)
Bachelor Degree in Mathematics (Magna cum Laude)

CERTIFICATIONS

- Automata (Coursera)
- Algorithms I and II (Coursera)
- Machine Learning (Coursera)
- Mining Massive Datasets (Coursera)
- Principles of Reactive Programming in Scala (Coursera)

SKILLS AND EXPERTISE

- 8+ years of experience as a Software Developer (mainly web)
- Scala, PHP, basic knowledge of Java, Ruby, Haskell
- Strong understanding of strengths and weaknesses of OOP, strong OOP architectural skills.
- Knowledge of advanced FP concepts, like (Free) Monads, type classes, F-bounded polymorphism
- Best practices, design patterns, code refactoring
- Maths, Probability Theory, Type Theory, Lambda Calculus, Machine Learning, Data Mining
- TDD, BDD, Domain Driven Design
- Docker, Vagrant, Nginx, Sbt, Git

EXPERIENCE

Senior Software Developer: DXI Ltd - 8x8 Inc
March 2014 - Current
Developed high-scalable PHP applications in different frameworks (Laravel, Phalcon, Symfony components) in a highly distributed, traffic intensive environment (millions phone calls per day made by the software).
Key Experiences:
- Implemented a high-perfomance reporting system

- Defined a Context Free Language for customer data retrieval
- Wrote a cross-service SQL profiler tool in a functional style, highly optimized existing APIs
- Componentized projects in many, highly-reusable, composer libraries
- Implemented OAuth2 authentication system for the platform
- Designed level 3 RESTful APIs with custom mime-types and hypermedia controlsHalved memory and CPU footprint migrating the main application from Laravel to Phalcon
- Fixed years long standing and critical security bugs in the first couple of months

Software Developer: Comperio s.r.l
August 2011 - March 2014
Lead developer of DNG, an OPAC software that serves almost a thousand of libraries. It is the second most used OPAC software in Italy, and it is by far the most technologically advanced within its competitors. DNG is written in PHP and it is built on top of the Silverstripe CMS.
Key Experiences:
- solved the problem of heterogeneus data sources with a data layer to uniformly access library data from different sources (MySQL, SOAP, SOLR)
- definition of a context free language for OPAC queries
- Turbomarc (a dialect of UNIMARC) transformation layer for extracting data from SOLR documents
- implemented a really powerful shelf and saved-searches system for user and librarians
- improved dramatically the reactivity of the application with a semantically event-driven client-side code, modularized through RequireJS
- used GruntJS for the build process (composer, css/js minification, less compilation, etc.)

Fullstack Web Developer: ElectroYou.it
January 2005 - August 2011
ElectroYou is the italian community of electronics lovers and professionals, and it is one of the top websites in its field. It is written in PHP.
Key Experiences:
- Dramatically improved user engagement with gamification (reputation, achievements)
- Implemented an activity stream system and a powerful, multi-channel, notification system
- Integrated several open source projects (PhpBB, Mediawiki, Symfony components)
- Implemented a driver that transforms FidoCadJ code (a Cad for electronic schematics) embedded in forum posts to PNG.

OPEN SOURCE

- StringTemplate - A PHP string interpolation library. +150 000 installs, used by box.com
- Tree - A Tree data structure in PHP, +80 000 installs in Packagist, +200 stars
- DGIM - The Datar-Gionis-Indyk-Motwani algorithm in PHP
- WeightedRandomDistribution - An implementation in Scala of the ALIAS method for weighted random distributions
- DomainSpecificQuery - Define domain-specific queries and compile them into other formats
- Functionals - Higher-order functions for PHP
- PHPGenerics - Generics for PHP
- ~500 stars on GitHub, +2800 reputation on StackOverflow

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