

*I'm a passionate developer with a broad technical knowledge that enjoys feeling productive while creating software. I have strong object oriented and functional programming skills, experience building both frontend applications and backend systems, and I put a very strong emphasis on quality.*

*Skills: F#, C#, LINQ, RX, TPL, WCF, WPF, Silverlight, SQL, HTML, ASP.NET MVC, JavaScript, jQuery, C++, Python, Ruby, Java, Scala, Clojure, Racket, Matlab, R, Machine Learning, Hadoop, Azure*

## Professional Experience

### Senior Application Developer @ Citi, London

*August 2012 to Present*

- Development and support of high availability low latency servers for pricing and booking FX options
- Improvements to the system memory footprint and scalability
- Support for dual currency deposits and for multi-leg scheduling with solving
- Storage and analysis of historical data

Technologies: C#, F#, LINQ, RX, TPL, WCF, Java, Hadoop, HBase, Hive, TIBCO EMS, Caplin Liberator, GemFire, Symphony HPC, FIX, NUnit, Rhino Mocks, Wix, SVN, TFS, Team City

### Software Developer @ Trayport, London

*January 2012 to August 2012*

- Development of hosted clearing links for commodities trading in broker systems
- Development of pre-trade risk management system for energy markets
- Development of ASP.NET MVC web applications

Technologies: C#, F#, LINQ, RX, TPL, WCF, MSMQ, ASP.NET MVC, jQuery, Flot, Entity Framework, Autofac, Castle Windsor, NUnit, MSTest, Fluent Assertions, Moq, SpecFlow, MSpec, TDD, BDD, Perforce, Team City

### Software Engineer @ OutSystems R&D, Lisbon

*January 2006 to December 2011*

- End to end development of new language features for a visual DSL and correspondent IDE, including API design, visual editors implementation, and compilation into SQL, C#/ASP.NET and Java
- Architecture re-engineering of a very large code base from VB6 & C++ to .NET 3.5 / WPF
- Development of internal code generation tools to automatically generate multiple implementations from a single model definition
- Improvements to a C# to Java translator to support generics
- Design and implementation of a real-time syntactic and semantic analysis engine for an expression based language with error reporting integration in the IDE
- Implementation of a WYSIWYG web editor with live data simulation and support for mobile form factors using WPF and the MSHTML control
- Design of an embedded tutorials framework, with a strongly typed scripting engine and an interactive game-like UI
- Extensive work in serialization, compression, and definition of file formats to support very fast incremental load and save
- Optimization of a distributed compilation and deployment pipeline for improved performance and bandwidth usage
- Design and implementation of UI patterns and application templates in the OutSystems DSL, CSS & JavaScript
- Development of a unit testing framework for the OutSystems DSL
- Improvements to in-house bug tracking, project management and build server systems, built with the OutSystems platform
- Analysis of anonymous user data to extract common usage patterns and find more relevant areas of improvement
- Application-wide user interface redesign, using iterative process with prototyping of multiple alternative user interaction concepts
- Team lead for the UI team
- Product management, project management, and coaching

Technologies: VB6, C++, COM, LEX/YACC, Gold Parser, C#, LINQ, Fast Infoset, WCF, Windows Forms, WPF, MVVM, ASP.NET, HTML5, CSS, jQuery, Java, JBoss, Lucene, MSMQ, SQL Server, Oracle, NSIS, MSBuild, VUnit, NUnit, RhinoMocks, PostSharp, Selenium, CVS, SVN

### Teaching Monitor @ Instituto Superior Técnico, Lisbon

*March 2005 to February 2006, Computer Science and Engineering Department*

#### Programming Fundamentals *Sep 2005 to Feb 2006*

Functional programming exercises in Scheme

#### Artificial Intelligence *Mar 2005 to Aug 2005*

Theoretical exercises on AI Search, Logic and Planning; programming exercises in Common LISP

## Technical Certifications

## MSTS in Web Applications Development with Microsoft .NET Framework 4

June 2011

## Formal Education

## MSc in Information Systems and Computer Engineering @ Instituto Superior Técnico

1999-2005: all courses, 2009-2010: master thesis

Major in Intelligent Systems, Minor in Software Engineering

Master Thesis: "Testing support for the OutSystems Agile Platform"

Participation in several programming contests:

MIUP'2004	National ACM Programming Contest
8th Micro-Rato	National Robotics Competition
MIUP'2003	National ACM Programming Contest
CeNPL'02	National Logic Programming Contest
SWERC'02	Southwestern Europe Regional ACM Programming Contest
IOI'99	XI International Olympiads in Informatics

## Hobbies & Interests

### Blog

<http://blog.codebeside.org>

### Open Source Contributions

FSharpX	FSharpChart
FSharp.Data	Math.NET Numerics
LondonR	

### User Groups Participation

Data Science London	F#unctional Londoners
London Machine Learning	London Windows Store App Developer Group (1 app in development)
LondonR	Windows Phone User Group (2 published apps, 1 in development)

### Online Courses

**Introduction to Databases** by Prof. Jennifer Widom, Stanford University

October 2011 to December 2011

**Introduction to Machine Learning** by Prof. Andrew Ng, Stanford University

October 2011 to December 2011

**Introduction to Artificial Intelligence** by Profs. Sebastian Thrun and Peter Norvig, Stanford University

October 2011 to December 2011

**Model Thinking** by Prof. Scott E Page, University of Michigan

February 2012 to May 2012

**Introduction to Finance** by Prof. Gautam Kaul, University of Michigan

July 2012 to October 2012

**Computing for Data Analysis** by Prof. Roger D. Peng, Johns Hopkins University

September 2012 to October 2012

**Functional Programming Principles in Scala** by Prof. Martin Odersky, EPFL

September 2012 to November 2012

**Mathematical Biostatistics Bootcamp** by Prof. Brian Caffo, Johns Hopkins University

September 2012 to November 2012

**Social Network Analysis** by Prof. Lada Adamic, University of Michigan

September 2012 to November 2012

**Probabilistic Graphical Models** by Prof. Daphne Koller, Stanford University

September 2012 to December 2012

**Neural Networks for Machine Learning** by Prof. Geoffrey Hinton, University of Toronto

October 2012 to December 2012

**Learning from Data** by Prof. Yaser Abu-Mostafa, Caltech

October 2012 to December 2012

**Programming Languages** by Prof. Dan Grossman, University of Washington

October 2012 to December 2012