Gustavo Guerra

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London, UK

Curriculum Vitae

I'm a passionate developer with broad technical knowledge that enjoys feeling productive while creating software. I love to be challenged and to learn new things, and my main interests are Functional Programming, Data Science, and User Experience Design.

Skills: F#, C#, LINQ, RX, TPL, WCF, WPF, Silverlight, SQL, HTML5, CSS, ASP.NET MVC, JavaScript, jQuery, C++, Python, Ruby, Java, Scala, Clojure, Racket, Matlab, R, Machine Learning, Hadoop, Windows 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 of FX options
- Improvements to the scalability and robustness of the system
- 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 cloud hosted links to clearing systems for commodity trading applications
- Development of pre-trade risk management system for energy markets
- Development of ASP.NET MVC management frontends

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

- Team lead for the UI team, with project management and coaching responsibilities
- Participation in product roadmap definition with the product management team
- End to end development of new language features for a web framework based on a visual DSL, including API design, implementation of the development IDE modeling tools, and changes to the compilers targeting SQL, C#/ASP.NET and Java
- Application-wide user interface redesign, using iterative prototyping of multiple UX concepts
- Analysis of anonymous user data to extract common usage patterns and improve the usability of the IDE
- Design of an embedded tutorials framework, with a strongly typed scripting engine and an interactive game-like UI
- Architecture re-engineering of a very large code base from VB6 & C++ to .NET 3.5 / WPF
- Development of an internal code generation tool to support sharing of the model between the IDE and the servers
- 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 WYSYWYG web editor with live data simulation and support for mobile form factors using WPF and the MSHTML control
- 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
- 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
- Implementation of a custom search engine for the IDE documentation and suggestion of content based on user activity

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, VBUnit, 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

User Groups Participation

Data Science London	UK Windows Azure User Group
London Machine Learning	London Windows Store App Developer Group (1 app in development)
F#unctional Londoners	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

Introduction to Data Science *by Prof. Bill Howe, University of Washington*
May 2013 to Present (ongoing)