Daniel A. Inzirillo

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PROFILE

Expert C++ software architect and developer with over twenty years of experience in various roles. Four years in investment banking, front office.

My expertise:

- Object Oriented design and development in C++, on Windows and UNIX.
- Expert STL developer.
- Refactoring of large software products to improve performance and robustness.
- High performance multithreaded or multiprocessing applications.
- Development of efficient algorithms.
- Scientific computing.

Experienced with: C++, STL, C++ templates, Windows and POSIX threads, intra- and inter-process messaging and synchronisation on Windows and Linux/UNIX, TCP/IP, MFC, COM, DCOM, UML, Design Patterns, x86 Assembler, and many communications protocols.

EDUCATION

2005 – **MSc Financial Engineering** (unfinished)
Birkbeck College, University of London
Subjects: Financial Econometrics, Time Series Analysis, and Stochastic Processes.

1991 - **MSc Computer Science**
Concordia University, Montreal, Canada

1988 - **Bachelor of Science, Physics, Honours Degree with Distinction**
Concordia University, Montreal, Canada
Awarded the Walter Raudorf Medal for Physics.

NATURAL LANGUAGES

Fluent in English, French, and Spanish. Functional in Italian.

EMPLOYMENT HISTORY

Quantitative Derivatives Analytics Library Architect
November 2009 to December 2010

February 2007 to November 2009

Royal Bank of Scotland
Interest Rates and Currency Options & Hybrids

ABN-AMRO Group
Global Markets Business Unit

London, United Kingdom

This position started at ABN-AMRO and transferred to RBS after it acquired ABN. At ABN I reported directly to the Head of Credit, Hybrid, Inflation and Commodity Derivative Analytics.

- I was responsible for maintaining the architectural integrity of the Common Analytics Library as it evolved, to provide technical support and guidance to the quantitative team and to the Head and to verify new code for conformance to standards and sound practices.
- Designed a C-like programming language to be used by the trading desk to optimize computations on the DataSynapse grid. Implemented an interpreter for the language.
- Improved the distributed computing code to increase the concurrency of the calculations or to implement the ability to cache constant objects on the grid to be reutilized by future computations.
- While at RBS I worked on maintenance and enhancement of the Common Analytics Framework used by the trading desk.

Software Developer (consultant)
October 2006 to February 2007

Barclays Capital
Fixed Income Risk and Pricing
London, United Kingdom

I took responsibility for maintaining code and implementing new curves related to inflation-linked instruments. Skills: C++, SQL, and some Excel/VBA development, plus proprietary tools.

Senior Software Developer
2003 to 2006

Macrovision Corporation
(now Rovi Corporation)
Berkshire, United Kingdom

- I was responsible for the core engine of a product for copy protecting CD contents which had already been released in over 300 million CD's around the world and was being produced at the rate of ~10 million a month. Notably in this role:
  - redesigned the engine to be multithreaded and to make it more robust

- developed a new algorithm for multichannel decryption, and
- greatly increased the number of supported devices.

- Designed the infrastructure for a new product dealing with large scale, secure distribution of TV programmes on the Internet.

Skills: Visual C++, STL, OOD, OOP, IPC and multi-threading, SCSI protocol.

Independent Consultant — Several consulting jobs in the US
2001 to 2003 — and Canada

- InterTrade Systems Corporation: Worked on existing Enterprise JavaBeans, JSP and servlet modules of a large Electronic Data Interchange (EDI) J2EE application.
- Fujitsu Softek: Worked on various parts of the Transparent Data Mirroring Facility (TDMF) product. Developed all of the MFC based GUI, and contributed to the database (MSDE SQL) and networking modules.
- Greenleaf Medical Systems: Rewrote the COM / DCOM portions of several modules for robustness and increased performance. Also some Windows CE development (targeting the H/PC Pro) to generate and print formatted medical reports.
- DeltaClick.com: TCP/IP development with IPWorks, WinSocks, Visual C++, and MFC.

Software Architect / Team Lead — Internet Gig.com
2000 to 2001 — San Francisco, California, USA

I designed the global architecture of a product for high volume multimedia storage and distribution on the Internet. I supervised a team of four developers and two QA specialists. Main personal contributions:

- Server development: designed and implemented in C++ a TCP/IP - HTTP multithreaded server. This server, which was fully object oriented and reusable, included a self-monitoring technology to guard against resource leaks and stalled threads. It was clocked at substantially higher speeds than Apache Server.
- Script interpreter: designed a proprietary script language used by the QA team for automatic, high volume, stress testing of the server. This language provided constants, variables, loops, etc., plus allocation of threads to concurrent tasks, to simulate a large number of simultaneous XML sessions between the test clients and the HTTP server. Using this tool two QA technicians were able to conduct both functional and stress tests on the Server, achieving rates of over three million test messages per hour, thus performing the equivalent work of a substantially larger QA team.

Skills: Visual C++, STL, OOD, OOP, UML, TCP/IP, MFC, HTTP, XML, compiler technology, multi-threading, library / framework design.

Software Architect and Developer — Nippon Telegraph & Telephone
04/1999 - 03/2000 — Multimedia Communications Laboratories
San Francisco, California, USA

This was an outsourcing project performed for NTT as an independent consultant. I was working alone and mostly off-site. I provided the analysis, architectural design, implementation, testing, and documentation of all the following:

- Videoconferencing library: designed and developed a general purpose library for real-time audio and video communications implementing ITU-T Recommendation H.323: *Packet-based multimedia communications systems*, along with required portions of other supporting ITU-T Recommendations such as H.225.0: *Call signalling protocols and media stream packetization for packet-based multimedia communication systems*, H.245: *Control protocol for multimedia communication*, Q.931: *Digital subscriber signalling system No. 1*, and others. Was responsible for the whole development cycle.
- Server development: used the above to design and implement *ArcSight*, an application for multimedia streaming. ArcSight can simultaneously hook into any number of on-going H.323 intranet videoconference sessions to make the data available to any number of non-H.323-aware client applications through a simplified interface, either in real time or off-line. After localization to Japanese, *ArcSight* became a commercial product in Japan, and has been used as a model for another product for distance learning.
- Server development: implemented a RealServer (RealNetworks) COM/DCOM encoder for live Internet broadcasting of video/audio data obtained from *ArcSight*. Visual C++, COM, DCOM, RealNetwork plug-ins.

Skills: Visual C++, STL, OOD, OOP, UML, TCP/IP sockets, COM, DCOM, multi-threading and inter-process synchronisation, implementation of H.323 and related ITU-T protocols (H.245, H.225, Q.931, H.261, etc), ASN1, library / framework design.

Sr. Software Engineer — Eclipsys Corporation
1997 – 1999 — (formerly HealthVISION)
Santa Rosa, California, USA

I worked in various parts of a large MFC product for electronic medical records management in a distributed SQL data base environment.

- Server development: designed and developed the *Alarm Notification System*, an enterprise-wide messaging centre for dispatching e-mail and alphanumeric page notifications using MAPI, TAPI, and the Telocator Alphanumeric Protocol. The Alarm Notification System is a multithreaded, highly scalable, fault tolerant DCOM server running as an NT service, and it is currently deployed in various hospitals in the US and Canada.
- COM / DCOM programming: Took full responsibility for a suite of DCOM client-server applications running in a distributed database environment to connect workstations with the appropriate database servers, implement workgroups, and centralize error logging and viewing.
- MFC and SQL programming: As needed, worked on various parts of the aplication, both on

the GUI and on MS SQL triggers and stored procedures.

Skills: Visual C++, OOD, OOP, UML, MFC, Win32, COM, DCOM, ATL, IDL, Microsoft SQL Server, MAPI, TAPI, Telocator Alphanumeric Protocol, multithreading.

Team Lead and Project Manager — Hamilton Software
1996 – 1997 — Santa Rosa, California, USA

Hamilton Software is an outsourcing software development house. I managed a project for CellNet Data Systems (now Landis+Gyr) in Redwood City, California. Led a team of three and interfaced with the client. This was a transitional job I took to move to California.

- Server development: designed a software gateway (router) between CellNet's wireless network and its Commercial Data Service clients. Besides such usual gateway tasks as validating, reordering, reassembling and redirecting incoming network packages, the software was responsible for keeping traffic statistics for the purpose of billing and documenting the quality of service. Implemented the gateway to execute either on a Windows NT or a UNIX SunOS environment.
- Stochastic server validation: designed and developed an application to synthesize network packages to test the gateway under a variety of normal and abnormal conditions. The program generated the data following configurable statistical parameters. Thanks to this application the gateway was tested with very little human resources, and was proven to be operational and virtually error free before the actual wireless network was in place, thus shortening the deployment time of a 125,000 node network by approximately three months.

Skills: Visual C++, Sun CC, OOD, OOP, Berkeley TCP/IP sockets, project and team management.

Previous positions omitted

For more information, to contact me, or to get a short version of this document:

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