

Sylvain Archenault

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Objective

A 6 month internship position as a I.T / Quantitative Analyst to apply my knowledge in applied mathematics and I.T.

Profile

Engineering student in applied mathematics, focused on applications in financial areas. An outgoing and hardworking person capable of working alone or with others in a team.

Academic Background

2007 - 2008	Ecole Nationale des Ponts et Chaussées - Marne la Vallée University « M.Sc. in Applied Mathematics, specialization in finance » Relevant Coursework: Stochastic calculus , Credit risk modeling , Interest rate modeling, Risk measures, MonteCarlo Simulation, Stochastic algorithm, Copulas, Malliavin Calculus.
2004 - 2007	INSA Rouen, M.Sc. in Applied Mathematics Relevant Coursework: PDE solving , Combinatorial optimization, Artificial Intelligence, Statistics (Parametric and non parametric estimation).
2002 - 2004	INSA Rouen, Classes Préparatoires Relevant Coursework: Intensive studies in Math, Physics and I.T.
2002	French baccalauréat in sciences obtained with honors [Lycée Marie Laurencin – Mennecy, France]

Professional Experiences

June 2006 - December 2007	Overlay Asset Management, Paris, France Consultant in the IT/Research department of Overlay Asset Management, a company specialized in the Forex market, focusing on the development of new applications to improve the information system. Designed an application used to gather market data from the Reuters platform. This application is able to deal with a thousand of financial instruments in real time. It can also carry out sample computation such as implicit rate calculation. The application is also intended to be entirely remotely controlled through a DLL. The market data can be saved in files or databases or be sent to other applications. Created a program capable of centralizing database queries. Its aim is to make the databases access easier and available for all applications. It also offers an abstraction layer on database architecture. Hence, it loosens the coupling between applications and database architecture.
Summer 2005	GeoConcept SA, Paris, France Summer internship with the Research Development team. As part of the development of an embedded cartography application. I mainly worked on the communication between the graphical front-end in Java with the proprietary cartography kernel in C++. In a second phase, I improved the performance and the reliability of a webserver Apache module. This module is able to generate maps through the HTTP protocol.

Educational Projects

March - May 2007 **Genetic Algorithm applied to trading strategies**

As part of a course, developed a C++ application able to generate trading strategies (Combination of technical analysis rules) using a genetic algorithm. This project was inspired by the article of DAH Dempster and CM Jones : « A real-time adaptive trading system using genetic programming ».

November 2006 - February 2007 **Neural Networks and CAC 40 Index forecast**

This project focused on the problematic of price forecast. I implemented a neural network (Perceptron with one hidden layer) to provide/simulate CAC 40 index forecast. The program can provide forecasts for the next day.

October 2005 - May 2006 **Markowitz portfolio theory**

Wrote a java application where the user can manage a portfolio. The application simulates the 40 assets composing the CAC 40 index. The simulation is performed, we compute the historical covariance matrix over the past 5 years. The application computes three different efficient portfolios, so the user can compare its performance. Moreover, I studied an algorithm which computes efficient portfolio under concave transaction costs and minimal transaction unit constraints. This work was based on the article of Hiroshi Konno and Annista Wijayanayake : « Portfolio optimization problem under concave transaction costs and minimal transaction unit constraints ».

Skills

Languages	<ul style="list-style-type: none">• English: fluent [TOEIC: 850] ; Involved in Debian translation project (www.debian.org)• Spanish: Intermediate level
Programming Languages	C/C++, Java , Latex, HTML/PHP (http://www.globetrotter-productions.com), SQL
Softwares	Scilab, R, Reuters, MySQL, Oracle

Extracurricular Activities

Student Association	Treasurer of the INSA « Junior-Enterprise »
Sports	Guard in hometown basketball team for 7 years.
Music	Bass guitar / Played in 3 rock bands since 2001.
Abroad Trips	<ul style="list-style-type: none">• 1997 : Exchange with a U.S student. I spent three weeks with her family (Detroit, MI), she then traveled for three weeks to France.• 1999 : I lived one week in a Spanish family established in Madrid suburb.