Mathieu Mallet

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Objective

A position designing and implementing graphics technologies for embedded or mobile environments.

Summary

I'm a computer engineer with ~8 years of experience, mostly in Java programming. My largest professional accomplishment is the full design and implementation of an automated financial trading system, from conceptualization to deployment. This included design and implementation of software as well as procurement, setup and administration of underlying hardware.

Education

BACCALAUREATE OF APPLIED SCIENCE
Computer Engineering (Co-operative Education Program)
University of Ottawa (Ontario)
Graduated with High Honors

Accomplishments

I have designed, implemented and deployed a fully-automated financial trading platform that is still used today. The software was written in Java with a web user interface written in JSP. The platform supports dynamic installation of trading algorithms written in Java, C or MATLAB, and supports trading in multiple markets on multiple trading brokers.

I have procured, setup and administered a data-storage server supporting over 10TB of storage space. The server was running SmartOS and used ZFS for data storage. Virtual machines were run on the server to both provide access to the data (through shares and databases) as well as to collect and process financial market data. Automated on-site backups were setup.

I have implemented a trading algorithm simulator using the CUDA compute platform. This allowed for speedups of over 10,000 times over non-optimized single-threaded code. The simulator was implemented to be easily usable by analysts from MATLAB.

Professional Skills and Abilities

Programming	Have extensive work experience in Java and JSP, as well as experience in C, C++, Perl, Bash and UnrealScript
Technologies	Work experience with MySQL, Tomcat, ZFS, Linux, Solaris, CVS and SVN, SWT, CUDA, virtualization with both Solaris Zones and Linux KVM
Academics	Have academic knowledge of signal and image processing, VHDL, and assembler on Intel 8085, Motorola 68HC12 and Microchip PIC12F675 (RISC)
Communication	Fluently bilingual in both English and French

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Work Experience

Software Developer for Apollo Systems Research Corporation	Fall 2005 to Present

Apollo SRC, Kanata (Ontario)
• Designed and implemented a fully-automated financial trading platform (Java, JSP, C, Tomcat, MySQL)
• Designed and implemented a flexible reporting framework (Java, JSP, Tomcat, MySQL, jFreeChart)
• Setup a 10TB+ data-storage and virtualization system (SmartOS/OpenSolaris + ZFS)
• Procured, setup, administered and maintained Linux-based servers (Debian, Fedora and Ubuntu) and Solaris-based virtual machines (SmartOS Zones and Linux KVM)
• Designed and implemented a reporting framework
• Used the CUDA parallel toolkit to accelerate financial analysis models
	Skills Used
	
	Programming:
	  Java, C, Perl, Bash, CUDA, SWT, JSP, SQL
	Technologies:
	  ZFS, Linux, Solaris, MySQL, Tomcat
	Other:
	  Debugging

Software Engineer for NavCanada	Summer 2003

NavCanada, Ottawa (Ontario)
• Ported software written for HP computers to HTBasic in order to upgrade an existing Flight Inspection system to a recent architecture
• Installed, configured and tested hardware used to interface General Purpose Interface Bus (GPIB) devices to a Windows machine
• Performed extensive debugging of system problems caused by undocumented HP Basic/HTBasic incompatibilities
• Worked in lab environment to perform systems tests on ported software
• Presented various recommendations as to how a specific piece of equipment could be interfaced with the new system
	Skills Used
	
	Programming:
	  HTBasic, HP Basic, Perl
	Technical:
	  GPIB interfaces, RS-232 interfaces, function generators
	Other:
	  Debugging

Software and Asset Development for Kamehan Studios	Summer 2000 to Summer 2003

Kamehan Studios, Paris (France), Work through the Internet
• Part of a team of 6 programmers, 30 asset developers and 20 testers
• Created 3D worlds for online gaming
• Written and debugged code used in an online game that was eventually published and sold in stores ('Tactical Ops') which sold 100 000 units
• Participated in team efforts such as stress testing internal betas
• Went through an entire software development cycle, from design to testing and post-release maintenance
• Wrote and integrated an added-value component for the game in the form of a single player mission pack
	Skills Used
	
	Programming & design:
	  UnrealScript, UnrealED
	Other:
	  Team coordination, testing

Interests and Activities

Aikido, mountain-biking, kayaking, woodworking, various electronics projects

Projects

Xbox Remote Add-on

Designed a small circuit board that, when interfaced with an Xbox console, allows the user to power up the device using a remote control. The circuit makes use of a PIC12F675 micro controller programmed in assembler.

Maze-solving robot

Participated in the design, integration and testing of a maze-solving robot. This robot would navigate a maze, recording its configuration and finding the shortest path. This fourth year project was managed in groups of 6. I have written most of the FPGA's VHDL code required to operate the robot's IR sensors and motors as well as written the core navigation and data processing units. I have also written the GUI of the Java software used to monitor the robot.

REM Monitor

Designed a data acquisition board to detect and record REM information. Using an infrared sensor and a PIC16F676 micro controller, the board is able to detect the eye movements of a sleeping person and store the data on an internal EEPROM. The RISC micro controller is programmed entirely in assembler.

For more information about my projects, visit my website at http://mmallet.ottawaengineers.ca

References will be provided upon request