James Ma

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# WORK EXPERIENCE

## **Senior Software Engineer, Intelligrated** - Jan*/2007  - present – Frederick, MD*

* Experienced with writing and developing unit tests under the jUnit testing framework and under the Test Driven Development model, about 7 years.
* Develop, maintain, and troubleshoot code with Java (JEE) and C# (Winforms and Visual Studio 2013) at the Enterprise level, for 11 years.
* Seven years of experience with using C#/.Net for test automation.
* Eleven years of experience documenting test results.
* Created in-house automated testing systems:
  + Using expect (Tcl) script to test RF gun server – logging in with username/password, inputing menu options to perform verious tasks like scanning a chute to deallocate it, and pretending to scan an item by typing in a barcode to signal it is ready for processing. Ran multiple copies to verify the RF Gun server could handle the required maximum number of users. Once started, runs independently and is designed for overnight use.
  + Used bash shell script and xdotool to interfact with a GUI, simulating button presses to signal that a given chute was finished and should be deallocated. Could simulate thousands of button presses. Once started, runs independently and is designed for overnight use.
* Set up Eclipse to use -Xrunjdwp:transport=dt\_socket to debug Java applications over a network. Set up breakpoints and stepped through code logic to find errors.
* Assisted in an upgrade of a code base from Java 6 to Java 8, which involved rewriting Swing event handlers to use Java 8 lambas.
* Experience with writing and maintaining HTML and Javascript and CSS, used to display statistical report data in a web browser
* Made repeated use of design patterns, e.g.
  + Factory pattern, a telegram interface to represent an abstract telegram plus a derived class for each telegram type, and then a telegram factory class to create each telegram.
  + Factory pattern, an abstract sorter part type, derived classes for each sorter part represented on a model, and a sorter part factory class to instantiate each sorter part.
  + State pattern, created an item class as the context and various state classes such as ItemInductedState, ItemDischargedState, etc. to represent various actions on items (and which caused the behavior of the item to change).
* Devised a means to store unstructured data in a MySQL database to represent “items” on a tilt tray/cross belt circular conveyor system (which can have arbitrary properties) as a blob of text.
* Created various data structures to represent complex relationships, e.g.
  + base properties of an item (human readable names represented as strings, position data represented as integers, measurement data (weight and height) represented as floating point doubles, neighbor items represented as a list of items within the structure).
  + Telnet screen session (user id, user name, menu that the user is on, socket associated with the telnet session, last option the user picked, logged in time, hashmap/dictionaries to look up the telnet session by the user's name).
  + Model of properties of an input or output on a programmable logic controller (name associated with the input/output, type (in or out), access tag string, address information).
* Worked on a program to stream images from an AXIS camera over a network to a thick client viewer.
* Working on a desktop Winforms client, in C# – a multi-tabbed, multiple document interface GUI, which connects to a series of services and displays data and allows the user to interact and control the system.
  + Developed a panel from scratch for this client which showed live statistical data to the end user.
  + Developed another panel which allowed users to control infrared devices.
  + Enhancing the existing 3D model viewer with functionality for new device types.
* Experience with ASP.NET MVC, as part of an effort to replace the desktop Winforms client with a version that works from within a web browser.
  + Familiar with SOAP and web services due to this effort.
* Created a number of standalone GUI tools using Winforms and C#, including the following:
  + XLSX parser to generate an SQL script to populate a 3D model.
  + Another XLSX parser to take a partly filled in XLSX file (I/O list) and fill in the remaining data.
  + A log file parser that takes a log file and generates a series of XLSX files to describe the collected data.
  + Another log file parser that takes a log file and displays graphical data about problem areas.
* Set up and maintained Subversion repositories and Git and Mercurial version control systems
* Maintained a Java desktop client developed using AWT/Swing.
* Experience with Agile development (CI/CD) and SCRUM, and performing and participating in code reviews
* Experience with using Jenkins for automated test builds (under Continuous Integration)
* Performed performance and regression testing of applications with QA team, 6 years
* Provide Level 2 customer hotline technical support
* Develop and maintain various MSSQL scripts
* Assisted in re-implementing PCCT (Portable Carrier Configuration Tool), which uses infrared to wirelessly control and command lightweight motors.
* Extensive unix shell script and C code development under the SCO Openerver and Redhat Enterprise GNU/Linux environments
* Python code development under the MS Windows and GNU/Linux environments
* Set up and maintained Windows and Linux guest virtual machines as test environments on VMWare server and VMWare ESX Server and VirtualBox
* Assisted in setting up and maintaining server and workstation hardware, including replacing PCI cards, hard disks, and cdrom drives.
* Extensive knowledge of IP networking (setting IP routes, configuring iptables-based firewalls, setting up Virtual Private Networks (PPTP, SSTP, and OpenVPN), setting up Ethernet bridges, and using virtual network interfaces)
* Experience installing and deploying Windows 2003, 2008, and 2012 Servers
* Experience installing and deploying a variety of Linux servers, such as RedHat Enterprise, Gentoo, Debian, and ArchLinux, and am familiar with their respective package managers (rpm, emerge, apt-get, and pacman) as well.
* Experience installing and deploying Microsoft SQL Server, PostgresSQL, and MySQL systems.
* Experience installing and maintaining Apache web servers
* Experience with Tomcat and JSP serverlets
* Experience with using JIRA for bug tracking and Confluence
* Briefly worked with the clang static analyzer, 1 year.
* Experience with JAD (Java decompiler) and Apache Common BCEL.
* Developed applications that relied on Websphere MQ
* Developed and maintained UIO framework and Linux Kernel Module drivers

# SIDE PROJECTS

**OpenEuphoria: Helped develop and maintain a programming language, OpenEuphoria (including the unit tests). Worked on HTTP library for this language.**

**OpenEuphoria Forum: Helped develop and maintain a new, home grown custom forum software for a website, http://openeuphoria.org - source code for the software is available at** <http://scm.openeuphoria.org/hg/euweb/>

CodePen.io: Working on front-end projects using AngularJS and Bootstrap at <https://codepen.io/post-j-ma/>

ACX111 driver: Experimented with Linux kernel driver for Texas Instruments ACX111 chipset wireless card. Detailed at <https://sourceforge.net/p/acx100/mailman/message/27938580/>

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# EDUCATION

## 2006 B.S. in Computer Science, University of Maryland

# TECHNICAL SKILLS

Java, JavaScript, .Net, XML, HTML, TCP/IP, Visual Studio.Net, Eclipse, SQL, MS SQL Server, MySQL, PostgresSQL, C, C++, C#, Winforms, Maven, Apache Ant, Bash Shell Script, Python, GTK, Subversion, Mercurial, Git, Redhat and Debian Linux/GNU System Administration