Milan Ramaiya

CONTACT

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OVERVIEW

todo

EDUCATION

M.S., Neural Engineering
Dec 2010 — University of Illinois at Chicago — Chicago, IL

B.S., Applied Mathematics
May 2005 — Florida Institute of Technology — Melbourne, FL

B.S., Computer Science
Dec 2003 — Florida Institute of Technology — Melbourne, FL

EMPLOYMENT

Senior Developer
Jan 2010 - present — Inkchaser — Chicago, IL

Description:
todo

Responsibilities:
- todo

Awards:
- 2010 InformationWeek 500 for innovation in business technology
- 2010 Springy Awards, Best Web Application

Research Assistant
Jan 2009 - July 2010 — Rehabilitation Institute of Chicago — Chicago, IL

Description:
todo

Responsibilities:
- todo

Senior Developer
Dec 2007 - Jan 2010 — Innerworkings — Chicago, IL

Description:
todo

Responsibilities:
- todo

Senior Developer
Sep 2006 - Dec 2007 — Quickset — Northbrook, IL

Description:

Quickset specializes in creating pan and tilt systems. Pan and tilt systems are robotic systems, which pan (horizontally) and tilt (vertically). They are most prevalent in security systems. In addition to creating off-the-shelf hardware, Quickset also provides integration between pan/tilts and attachable devices (cameras, floodlights, A/V, etc.) The software team is in charge of developing everything from the backend protocol implementation to the user interface that each client requests. When I joined Quickset, their software had grown to become bloated and unstable and was a maintenance nightmare. It was my duty to create a new architecture that would be easily maintainable, as well as scalable, while, at the same time, fulfilling customer requests that were taking place. I designed a three-tiered architecture to support a variety of devices on the backend, a variety of user interfaces on the frontend, and an abstract communication layer between the two.

Responsibilities:

- Designed UML diagrams to define the architecture and display control flow between the different layers.
- Developed an n-tier architecture to support easily interchangeable layers.
- Implemented a highly managed multi-threaded backend, with support for unloading and reloading of devices during runtime.
- Designed and developed the common frontend layer using an MVC pattern to allow multiple user interfaces (ie: a Swing GUI and custom hardware controller) to be interoperable with a single source of data.
- Used Factory pattern to easily create devices with otherwise highly specific parameters.
- Used Decorator pattern to attach functionality to devices only when necessary.
- Implemented a rich Swing user interface, using custom TableCellRenderers, custom LayoutManagers, Drag and Drop support, and completely custom components using Graphics2D (ie: radial aircraft-style gauges and seven-segment displays).
- Debugged multi-threading problems, including race conditions and deadlocks.
- Used Interfaces to define a communication layer to allow the same Swing GUI to be used as either a thick or thin client.
- Developed thread-safe implementations of synchronous and asynchronous protocols.
- Used Collections, Map, and concurrent Frameworks in numerous locations inside the applications thread-safe data storage.
- Designed multiple implementations of the communication layer using MantaRay JMS, a custom TCP/IP protocol, and web application.
- Created a clean and fast web controller using AJAX, JSP, and servlets with an Apache Tomcat server.
- Created JUnit test cases and ANT build scripts.
- Developed lightweight and fast applications to be deployed onto embedded Linux systems.
- Used Java 1.5 varargs and Generics to allow for highly extensible objects.
- Used Apache Logging for debugging and logging errors.
- Used Java JNI to communicate with drivers and to embed Windows Media Player into a Java application to display streaming video from cameras.
- Used Java Media Framework to transcode audio to be streamed to a speaker mounted on a pan/tilt.
- Used Java Reflections and Annotations in order to allow dynamically created user interfaces for objects and plugins.
- Read and wrote XML configuration files.
- Used jhat and a variety of other tools to detect memory leaks.
- Used Eclipse for developing and debugging.
- Used CVS for versioning control.
- Conferred with clients for requirements analysis.
- Traveled to clients sites for delivery, installation, demo, and troubleshooting.

Proprietor

Jun 2005 - Aug 2006 Manual Supply Melbourne, FL

Description:
Manual Supply was a business I had created which sold CDs via the internet and primarily eBay. I had acquired a Primera disc publisher that could create and label CDs and an internet postage printer. I created software to automate the entire process.

Responsibilities:
- Used XML over TCP/IP to communicate with eBay Auction Management services to retrieve open orders and update statuses.
- Used XML to communicate with Endicia internet postage and Dazzle postage printer to calculate and print proper amount of postage for each package.
- Used a proprietary protocol to communicate with Primera Bravo Disc Publisher to automate creation of CDs.
- Designed a rich Swing user interface using custom ListCellRenderers and custom components to display the processing status of orders, and allow user to update status.
- Integrating all portions to completely automate order processing and fulfillment.

Developer
Jan 2004 - Jun 2005 Ensco Melbourne, FL

Description:
Ensco, Inc, is a Department of Defense contractor that specializes in mapping and meteorology software.

Responsibilities:
- Worked in an Extreme Programming environment to develop a variety of platform-independent, field-deployed, and mission-critical software.
- Used Agile methodology and test-driven development to create software.
- Created rigorous JUnit tests and ANT scripts for automated builds and nightly regression testing.
- Accessed MySQL databases using JDBC.
- Created and executed SQL queries, statements, and stored procedures.
- Used Collections and Map frameworks to store and update data.
- Debugged multi-threading problems, including race conditions and deadlocks.
- Used GridBagLayout, as well as custom LayoutManagers in Swing applications.
- Created custom Swing UI components for use in the company toolkit.
- Created webapps with Apache Tomcat, JSP, and servlets.
- Used SpatialFX to create a thick client Swing mapping system.
- Used JBuilder for editing and debugging.
- Used CVS for versioning control.
- Met with clients for requirements analysis and demos in the process of development.

Developer
Oct 2002 - Dec 2003 Florida Institute of Technology Melbourne, FL

Responsibilities:
- Worked in a team to develop a full-featured, modular x86/Win32 debugger in C++.
- Designed and developed the API interface debugger/UI communication.

Test Engineer/Intern
Jan 2002 - Sep 2002 GE Transportation Systems Melbourne, FL

Responsibilities:
- Conferred with clients to create use cases that met customer requirements.

- Created and executed WinRunner test scripts to meet use case specification.

Publications

Ramaiya M. *A Haptic/Graphic Paradigm for the Rehabilitation of Attention in Severe Traumatic Brain Injury.* Master's Thesis. March 2010.

Ramaiya M., Dvorkin A.Y., Zollman F.S., Larson E., Davitt L., Pacini S., Beck K., Patton J.L. (2009) Assessing and improving attention in TBI patients using Virtual Reality environments with haptic robots. Neuroscience Meeting, Chicago IL, *Society for Neuroscience*, October 2009

Greene A., Ramaiya M., Rousche P.J., Patton J.L. (2009) A system for simultaneous neural recording and spatial forelimb tracking during robot rehabilitation. Neuroscience Meeting, Chicago IL, *Society for Neuroscience*, October 2009.

Conference Proceedings

Greene AV, Ramaiya M, Rousche PJ, Patton JL, A System for Simultaneous Neural Recording and Spatial Forelimb Tracking During Robot Rehabilitation BMES society.

Other Projects

Tiger compiler
Jan - Jun 2002 Florida Institute of Technology Melbourne, FL
I was tasked with creating a Sparc compiler (in Java) for Tiger, a Pascal-style language. In the process of six months, I had to learn Sparc assembly and develop each part of the compiler: the lexer, parser, syntax checking, type checking, instruction selection, register allocation, etc. In the process of doing so, I properly learned the necessity of separating otherwise separate parts of any system, as well as heavy algorithm usage.

SwarmLinda
Oct 2002 - Jun 2003 Florida Institute of Technology Melbourne, FL
As part of my senior design project, we created a distributed memory system mirroring swarm behavior. In the process we managed multi-threaded servers with multiple TCP/IP connections and resource management of data, and algorithms to prevent network overload.