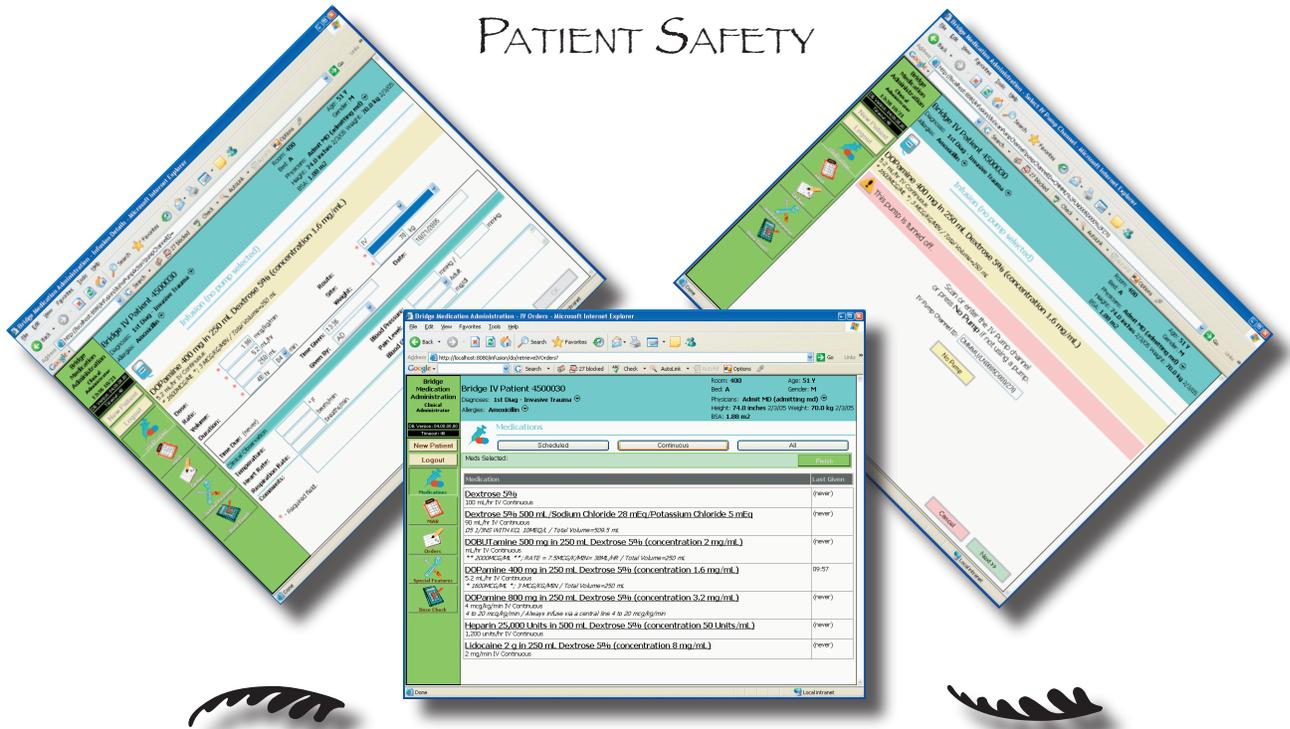


PORTFOLIO

CARMINE MANGIONE
PATIENT SAFETY



MedAdmin Bridge Medical, Cerner Inc.

MedAdmin eliminates medication delivery errors in hospitals by associating clinicians and patients with medications. Creating this product embodies the tension between experts with clinical experience, software professionals and the demands of modern software development. In addition, the relative inexperience of hospital IT staffs made delivery of 24x7, life saving software nearly impossible.

When Bridge hired me there was neither software development nor business process in place. This lack of process lead to a failure to deliver a new version of the software in more than two years even with the efforts of more than twenty skilled software and QA professionals. The challenge was to develop a process that supported the business and clinical needs while meeting the demands of a market segment whose quality is non-negotiable. In addition, the any new development had to leverage an existing infrastructure that had become brittle and unmaintainable.

To overcome these challenges, I instituted an agile methodology based on extreme programming with documentation enhancements to comply with stringent 510K certification requirements. In addition, I developed training materials for development, QA and business development that taught the necessary skills to implement the process. I also implemented stringent metrics to measure development progress. This new process delivered four new versions of the software on time with near zero defects and orders of magnitude better performance and a 98% reduction in customer support calls.

The process, training and mentoring not only revived a dying project but propelled a disillusioned team to new heights making them one of the most celebrated in Cerner.

PORTFOLIO

CARMINE MANGIONE

WEB 2.0



FoundValue FoundValue.com

My previous experience as a development executive and architect for web companies prompted the founders of FoundValue to ask me for assistance. They had received funding from Sequoia Venture Capital and had released a beta version of their product, but needed help moving forward.

FoundValue uses the Web 2.0 techniques of integrating services from eBay, PayPal, various postal and shipping services and accounting software to enable users, called specialists, to easily sell items on eBay for others. FoundValue handles all listings, updates, payments and shipping details including printing of packing slips, mailing labels and postage labels. FoundValue also has advanced client management features.

The product was experiencing many challenges. Some were from the nature of Web 2.0 and included buggy, incomplete and undocumented APIs, unreliable updates and poor testing environments. The other set of challenges was caused by the selection of implementation technologies: ASP.Net, C# and the use of non-object oriented techniques for data access and updates. The former caused sporadic hard to locate bugs while the latter made the cost of change for any fixes or new features extraordinary.

I created a process, ordered all of the bugs and requested features into value versus cost and risk, mentored and trained the developers. Over saw interviewing and hiring which was greatly complicated by high developer demand in the bay area and the selection of technology. My efforts made the team productive and successful in delivering their next version of the software and integrating with the new eBay APIs.

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CARMINE MANGIONE
BUSINESS AND SOFTWARE PROCESS



Free 30-day trial! Intuit Quickbase--Web-based project, sales, IT management and more. Gain visibility, control access to data, share files and info instantly. Perfect for mid-size and large companies.

Software Project Failure: The Reasons, The Costs

January 3, 2003
By [Carmine Mangione](#)

Software project failure is often devastating to an organization. Schedule slips, buggy releases and missing features can mean the end of the project or even financial ruin for a company. Oddly, there is disagreement over what it means for a project to fail.

This article uses anecdotal evidence to define what it means for

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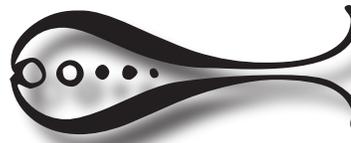
The Importance of Internalizing Quality

By [Carmine Mangione](#)

August 8, 2003: High-quality software requires more than a lack of bugs: it must effortlessly satisfy a user's needs with a minimum amount of training.

Product quality can make or break a company. Unfortunately, in software, most companies not only fail to deliver a quality product to their customers, but also fail to understand the attributes of a quality product. High-quality software requires more than a lack of bugs: it must effortlessly satisfy a user's needs with a minimum amount of training.

This article discusses the attributes of high quality software.



Pivotal Decisions, Process, Competition, and Success

By [Carmine Mangione](#)

September 7, 2005: Software development hierarchies need to take into account the realities of the real world, writes CIO Update guest columnist Carmine Mangione of Bridge Medical in this Special Report.

The Japanese ate our lunch in the automobile industry. Their cars were cheaper, more efficient, longer lasting, and, in the opinion of many, of much higher quality than American cars. Industry experts credited Japan's rebuilt industrial base after World War II, but this theory does not explain the billions spent in creating new plants during the expansion in the U.S. during these same years.

CIO Update Magazine

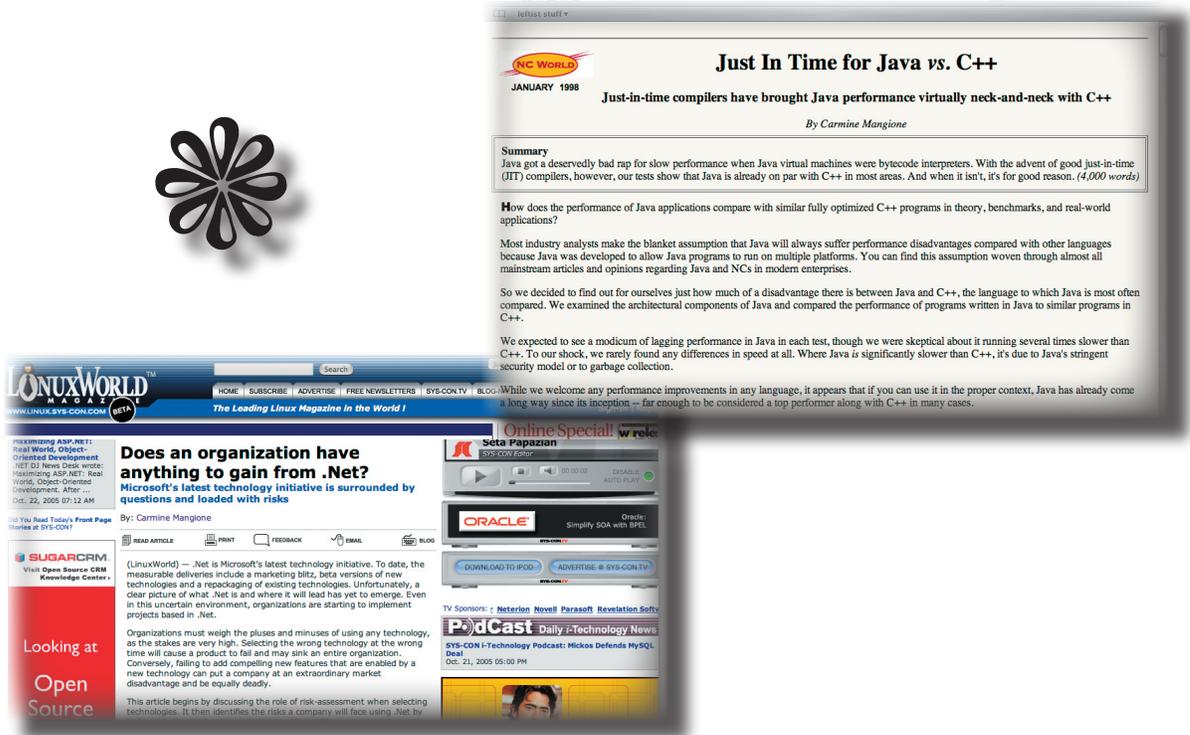
During the eighties, agile business practices such as TQA, revolutionized American businesses by giving them the same tools as their Japanese counterparts. Software engineering experienced a similar reformation with advent of object oriented design, patterns and agile methodologies during the nineties. However, few articles illuminate how these techniques create the foundation of successful companies in the fast paced software industry.

In a series of highly praised and widely referenced articles, I examine the root causes of failures in the software industry and contrast these with successful efforts. These articles uniquely explain the often esoteric details of software engineering in business terms.

The resulting descriptions move the discussion of modern software and business processes from the ivory towers of academia to the front lines of business development by correlating shared experiences with the goals and realities of all the stake holders throughout an organization. More importantly, the articles detail the balance between quality, cost, features and business value and how this balance must strategically drive the successful organization through the use of well defined metrics.

PORTFOLIO

CARMINE MANGIONE
TECHNICAL ARTICLES



Technical Journals

Computer technical writings tend to fall into one of two camps: dry and technical or emotionally charged rantings. The former is informative but limits access to a few highly trained and interested academics and the latter entertains but rarely extends knowledge. My technical articles bridge this gap by either taking the most misunderstood topics of the day and injecting rational thought and metrics or focusing on extremely challenging technical issues and presenting them in a language accessible to most software engineers.

For example, developers passionately argued that Java could never attain the performance of C++ applications. My knowledge of optimization theory and the availability of Just In Time compilers (JITs) made this proposition difficult to believe. I created an article that examined in detail how these compilers worked and showed that, in theory, Java should perform as well as C++ in most instances. I then created programs that prove the theory. Today, Java's ubiquitous presence in 24x7, high volume servers add credence to the original thesis.

PORTFOLIO

CARMINE MANGIONE
MEDIA MANAGEMENT



MediaBooster Bootleg Networks

Bootleg Network's Media Booster is an end-to-end digital media management system. Users import existing digital media assets in formats such as MPEG video, Redbook audio and JPEG. The system allows the creation and searching of meta-data associated with an asset, collecting assets, creating of clips and the automatic export to all popular streaming formats.

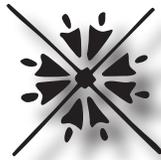
Bootleg presented the unique challenge of a company at the point of a hard restart, after a year in development, the company shutdown the previous product and business model and replaced the management team. I had to not only build a development team in the very competitive engineering market, but also put in place a new software process, help create a new business model and prepare presentation materials for investors and customers.

Bootleg allowed me apply the lessons learned at Excite and X-Spaces on a larger scale and to simultaneously invigorate a group of demoralized but excellent engineers while hiring new talent. I then created reliable metrics to guide product development and sales.

Bootleg became an amazing, fun place to work. I learned that the most productive and motivated employees are those who are happy and driven by the desire to create product of extraordinary quality. I still get calls and emails from the developers with fond memories of a challenging yet compelling workplace.

PORTFOLIO

CARMINE MANGIONE
PEER TO PEER CLUBS



RedRover XSpaces, Inc.

RedRover is a full featured peer-to-peer clubs program that eliminated the staggering infrastructure costs of clubs infrastructure. RedRover required the creation of an entirely new technology and demonstrated the power of agile methodologies to conquer even the most challenging projects.

The techniques of Extreme Programming created an environment that motivated engineers to work part time for shares of the company, yet produce incredibly high quality innovative code at a spectacular pace.

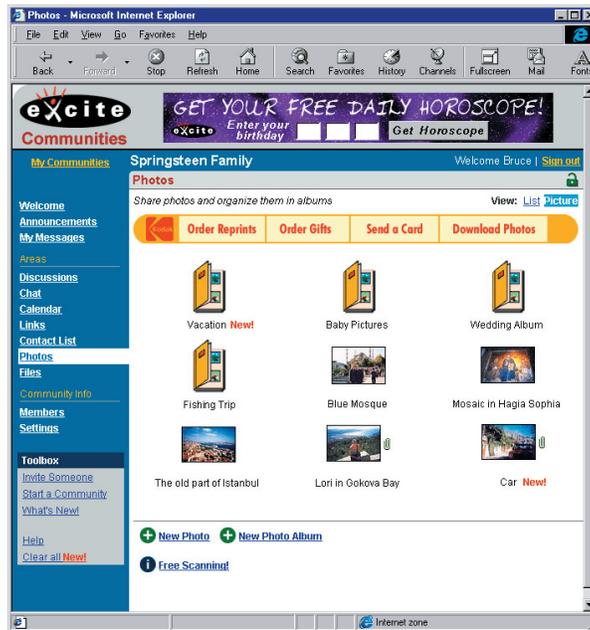
RedRover possesses the standard features of clubs such as chat and messages whose complexity still eludes other peer-to-peer developers. In addition, RedRover can stream video to a wide variety of devices.

This project demonstrated the power of Extreme Programming and its metrics to manage the cost of change of even the most demanding application with advanced algorithms and nascent technologies. The relentless application of patterns, full unit tests, test-driven design and automation testing resulted in an architecture that was scalable, maintainable and high quality.

PORTFOLIO

CARMINE MANGIONE

WEB BASED CLUBS



Excite Clubs Excite@Home

Excite Clubs was one of the most popular clubs sites on the web. At one point it sustained over 20 million page views per day and had more than a tera-byte of user input. This popularity presented two distinct challenges. First, no matter how much the platform scaled, traffic doubled on a biweekly basis until current limits were increased. Second, the explosive and lucrative market invited large numbers of imitators placing extraordinary pressure on the required feature list. In addition, the high traffic gave incredible visibility to the project.

Initially, I normalized the clubs data model and increased performance by a factor of two. I then became principal architect and became acutely aware of the challenges mentioned above. To meet these challenges I pioneered the application of object oriented design techniques and agile development methodologies.

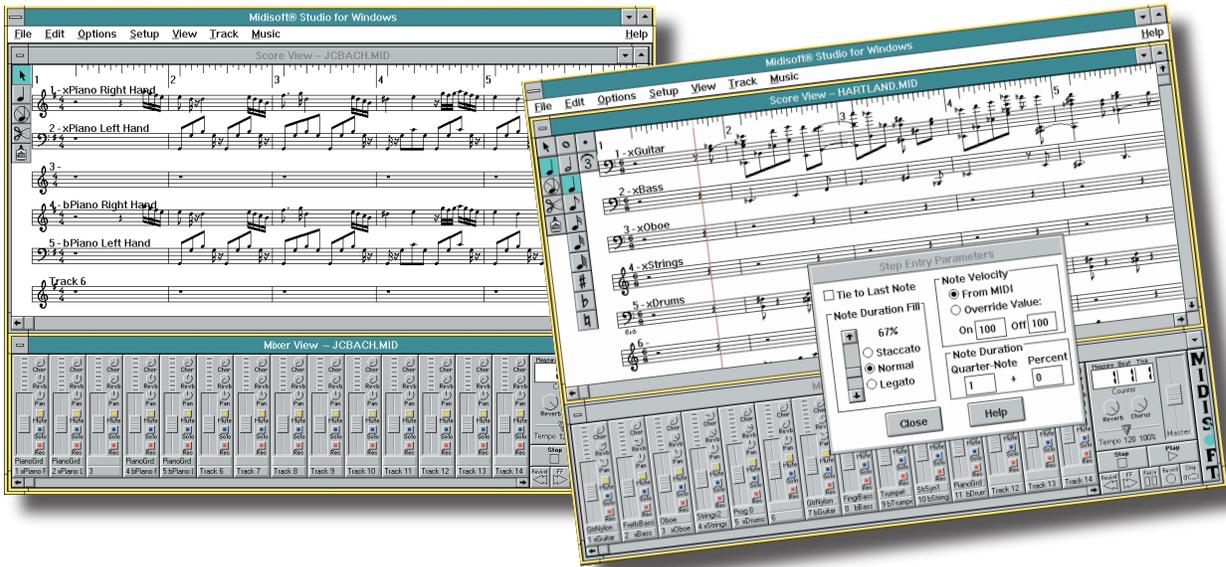
These techniques allowed us to deploy compelling 'sticky' features with high quality and performance that outstripped all other clubs sites. For example, we developed a unique activity tracker that allowed users to instantly determine which club contents they had not previously seen.

Excite Clubs represented an inflection point in my career. It demonstrated that proper application of agile processes, stringent metrics and proper architecture guaranteed the delivery of product even in a highly volatile environment. This focus allowed Clubs to not only grow in feature set, but popularity and speed.

PORTFOLIO

CARMINE MANGIONE

MIDI SEQUENCING



Midisoft Studio Midisoft Corporation

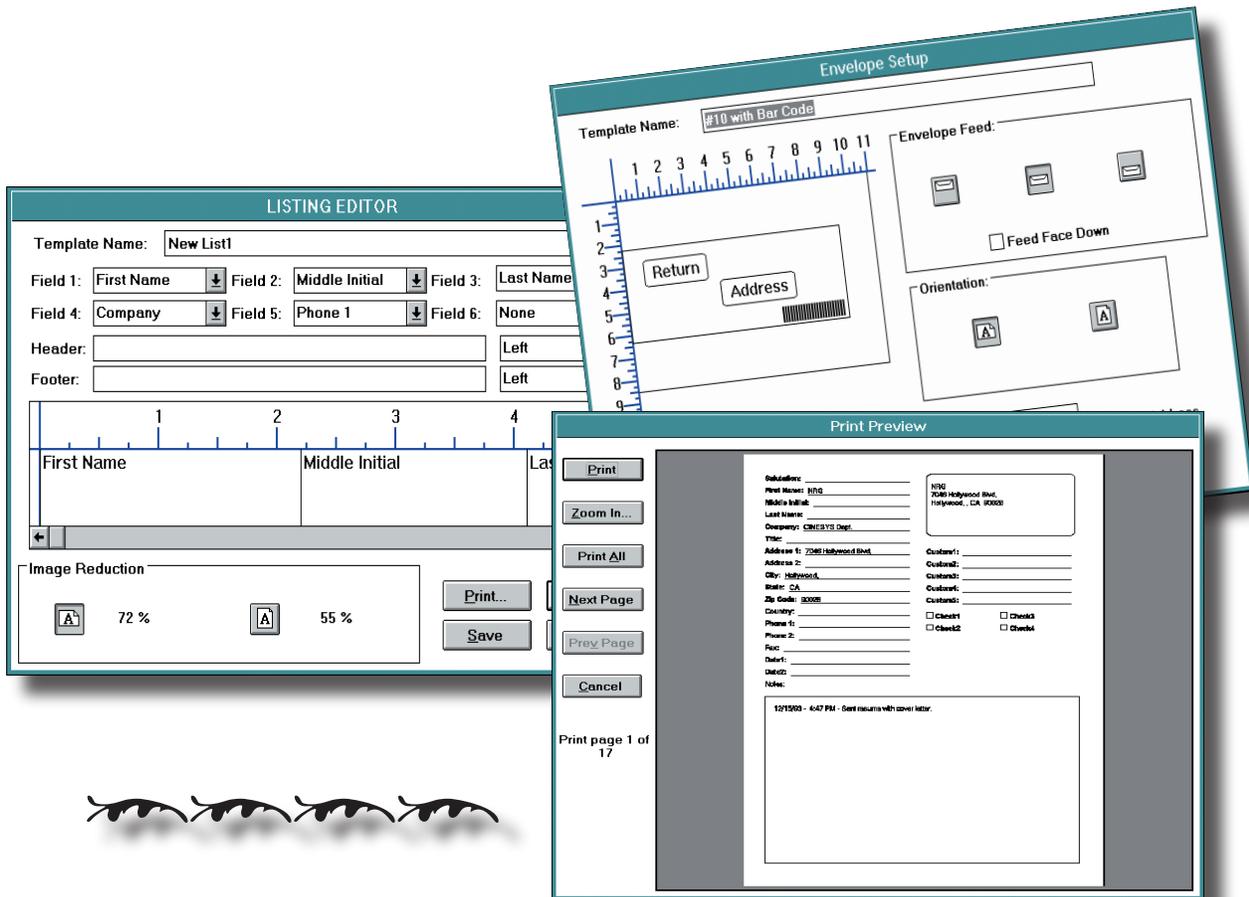
Midisoft Studio is a full-featured, commercially successful MIDI sequencer that sold more than one million copies. PC Magazine awarded it runner-up for technical excellence in 1992, and Musician magazine praised its notation interface as one of the best on the market. Bill Gates honored the Midisoft's technical achievement by selecting it as the featured product in his keynote speech at the kickoff of Windows 3.1 during Comdex 1991.

Midisoft introduced me to commercial software. When I joined Midisoft, they had significant success as a DOS application, however, the founder sought to drive the sequencer into the Windows based graphics market. This goal required an entirely novel approach to sequencers as any product had to overcome the challenges of the nascent Windows operating system. In addition, marketing promises tightened the delivery schedule to the brink of the unattainable.

In this environment, the major challenge was to improve quality, deliver differentiating features and come up with novel algorithms. Windows 3.1 presented unique challenges often found in nascent technologies. Under my technical guidance, Midisoft not created an award winning, commercially acclaimed software product, but became the gold standard for Windows multimedia applications.

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CARMINE MANGIONE CONTACT MANAGEMENT



Touchbase - Aldus Corporation

The commercial success of Touchbase for the Macintosh presented a unique challenge when Aldus bought the company and decided to create a Windows version of the product.

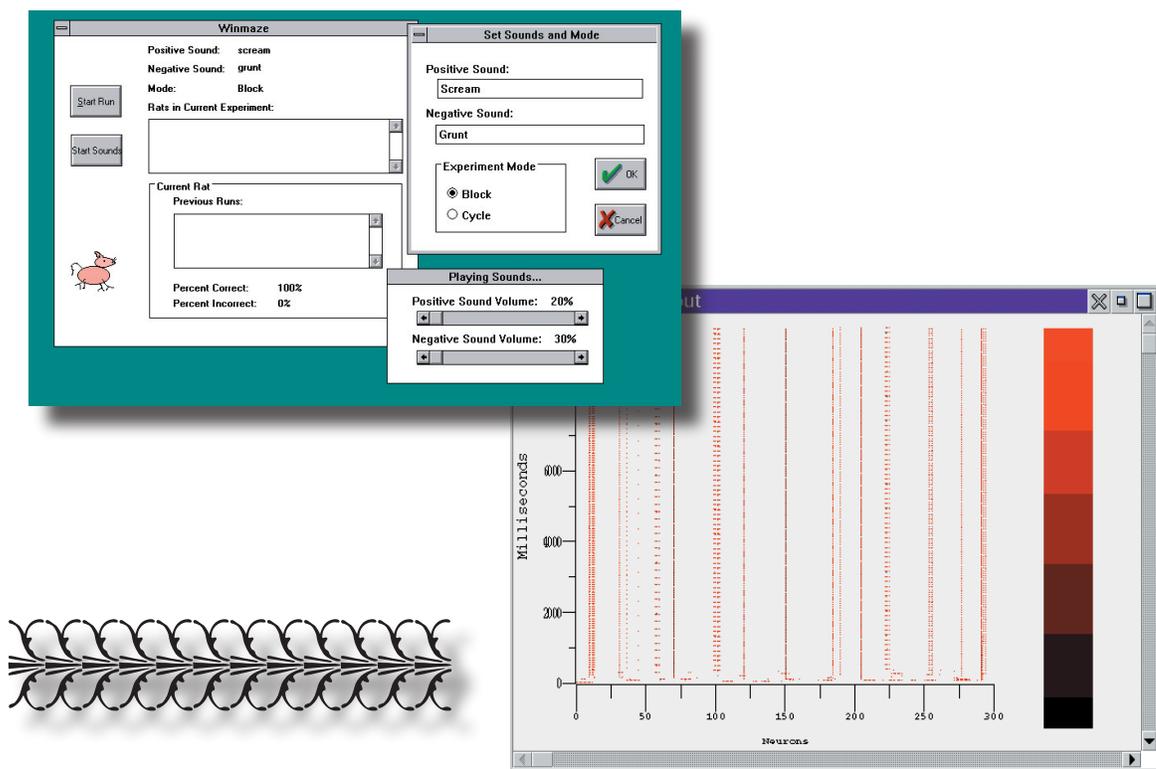
The product possessed a Macintosh look and feel which required all new custom controls built for Windows 3.1. In addition, Microsoft had not solidified its printer API for Windows 3.1. These factors combined to turn a relatively small project into a large engineering work involving many man years of work.

I came on as lead programmer originally to work on the printer interface and became the architectural leader. I extensively applied design patterns and C++ best practices to create a very high quality product.

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CARMINE MANGIONE

DISSERTATION RESEARCH



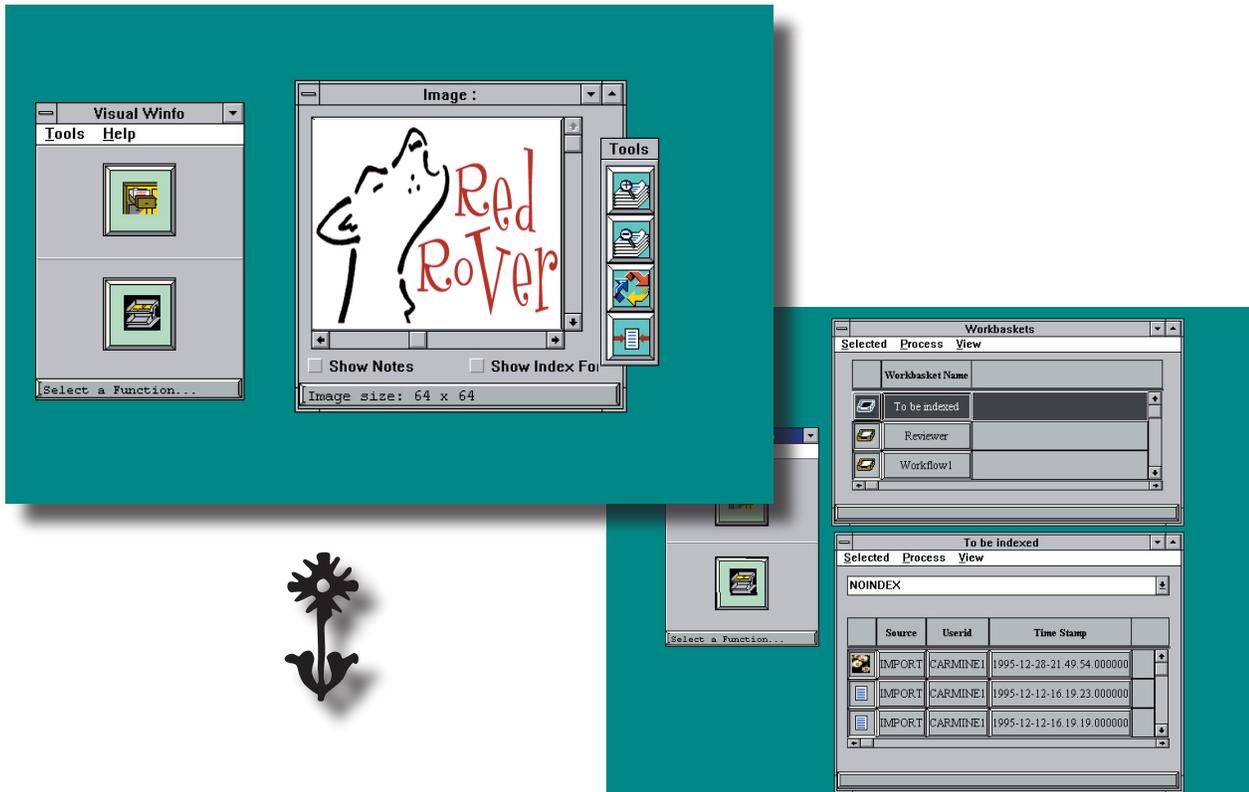
Computational Neuroscience Research University of California, Irvine

As a Ph.D. student in Computer Science, specialized in neural physiology and modeling. Created automated behavioral apparatus to test auditory learning in rats. Built the maze, performed all wiring and developed all software. Developed sound manipulation techniques to create, play, and display sounds in a rats auditory range. The apparatus played sounds, recorded responses and times, and rewarded rats on successful selection. The design allowed new experiments to be designed and performed. All data collected from the experiment is automatically loaded into Paradox where statistics and plots were generated.

Designed a model for the CA3 layer of the hippocampus. Performed experiments with the model and developed a flexible program for displaying the output. Developed algorithm for finding recurrent activity with the presence of noise in the output from the model. Used results from model to develop theory of learning in this layer. Created several tools to test theory.

PORTFOLIO

CARMINE MANGIONE
IMAGE MANAGEMENT



Visual Wininfo Avacom

Visual Wininfo is a client interface to IBM's Image Plus Visual Info server. It allows a user to browse the document database, view images in a variety of formats, including TIFF, ASCII, GIF, and JPG. Features include, attribute management, image sorting, workflow management, print and import.

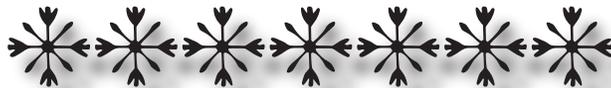
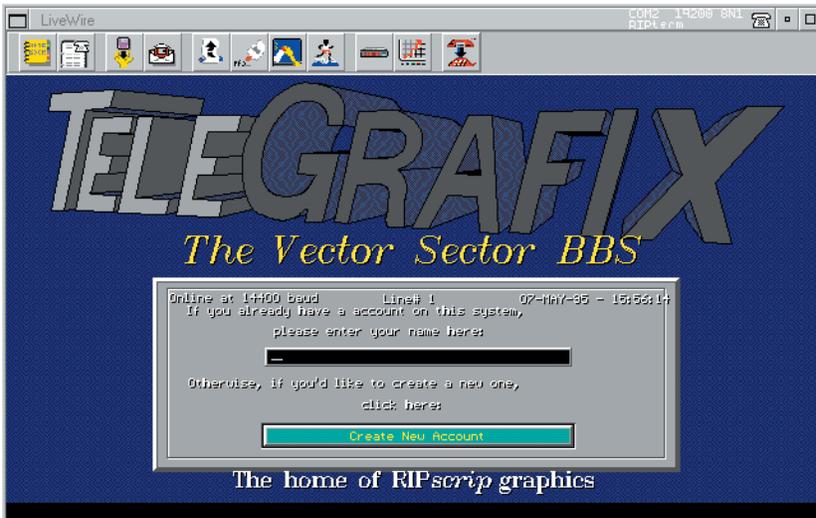
Designed, developed, programmed and tested entire product. Designed a UI that allows a customer to quickly and efficiently manage many images. Grouped all windows and controls for instant access to all information.

Developed object-oriented framework that allows a consistent look and feel and maximizes code reuse. Made custom controls to display, zoom, rotate and fit to page images, display ASCII files of arbitrary length, display a list of items with associated icons, draw 3-D borders, and drag and drop file import.

Delivered both 16 bit (Windows 3.1) and 32 bit (Windows NT and Win 95) versions. Created routines to get around the 64k limit in Windows 3.1 and used generic message templates throughout.

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CARMINE MANGIONE
ONLINE GRAPHICS



LiveWire 3.0 RIPTerm Module DataMirage Software

Ripterm is a graphical communications standard. Many popular bulletin board systems use this standard to transform their text-based dial-in systems into graphical interfaces. Interactive graphical games are even possible with this standard.

Developed a Ripterm implementation that works within LiveWire 3.0. Used the OS/2 Graphics Programming Interface to create sophisticated entities including spline curves and device-independent flood fill. Includes user-interface entities such as buttons, icons, bitmaps, and menus as defined by the Ripterm specification. Design focused on high-speed parsing and rendering of the incoming Ripterm commands, fast screen repaint, and faithful entity reproduction, a feature necessary for flood fill and robust operation.

Planning for the release of Ripterm 2.0, the parser is designed to be extensible. The graphics engine takes advantage of OS/2's advanced GPI and allows for infinite re-sizing of the graphics window.