Rob Rhyne

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profile

Equal parts designer and developer, Rob holds an opinion tragically uncommon for his field: he believes that technology should appear as beautiful to the user as it does to the developer. As a UI designer & developer for SRA International he has led several design & development projects, including work for the Maryland Dept. of Health & Mental Hygiene, the American Red Cross, Missile Defense Agency and the Environmental Protection Agency. He also runs his own design company, Digital Arch, which provides end-to-end design & development services for small businesses. He's an advocate for user-centered design and knows how to sell it to those not often concerned with the everyday user.

He specializes in User Interface Design and Software Development in the digital mediums. He is proficient in developing on several platforms. During his tenure at the Naval Research Laboratory he became the youngest ever recipient of the Berman Research Award at the age of 21.

experience

USER INTERFACE DESIGNER & DEVELOPER, SRA INTERNATIONAL, INC, 2002-PRESENT

As a member of the Advanced Programs (the R&D division of SRA), Mr. Rhyne is in charge of design and development for a variety of advanced technology that is the basis for future solutions and capabilities for SRA. He is a design advocate and expert within the company in matters related to Usability, User-centered design and standards-based web design. He is also a lead developer, integrating back-end solutions with front-end designs. Highlighted below are a few of the projects Mr. Rhyne has participated in over the past seven years at SRA:

VARIOUS INTERNAL PROTOTYPES & PROJECTS

As part of the R&D work for SRA, several of the projects were internal experiments and prototypes for future clients. Mr. Rhyne has used tools such as JRuby to integrate Ruby applications & gems to connect a secured Google Apps instance with existing legacy enterprise Java applications. This collaboration with Google was an attempt to create a FIPS certified Google solution.

Other projects include a virtual warehouse demonstration that provided both desktop and native iPhone interfaces for virtual warehouse management. The 3D library used on the iPhone was a Python-based extension of Blender, an open source 3D engine, that rendered models delivered from a Java web application.

Mr. Rhyne also experimented with several Rack based web frameworks deploying those applications on servers including Apache, Mongrel, FastCGI and Lighttpd. The focus was on working with fast implementation frameworks for rapid prototyping and test deployments.

THE MARYLAND DEPT. OF HEALTH & MENTAL HYGIENE

Designed and developed a custom Ruby on Rails application, with a MySQL back-end that securely transfers patient clinical data from one hospital to the next in the event of an emergency. The interface provides quick access to all of the information needed to aid doctors in providing continuing care after an emergency. Mr Rhyne took advantage of the Rails platform to rapidly prototype a system that could be put into production. As part of the project, Mr. Rhyne designed & developed both a desktop and an iPhone interface, along with developing a data schema that converted billing records into a clinical database.

THE ENVIRONMENTAL PROTECTION AGENCY (BROWNFIELDS ACRES)

Reengineered the ACRES application to comply with modern web standards and accessibility guidelines, in addition to decreasing the request load on the database server. Mr. Rhyne worked to reduce the amount of code required to generate the interface by 50%, while maintaining the integrity of the design and increasing the general accessibility of the application. This required retooling how the front-end pulled data from the SQLServer backend and optimizing the data schema for increased access speed.

THE AMERICAN RED CROSS (ARC)
Designed and developed the Donor Relation Management Portal (soon to be available at http://givelife.org) The portal was a customized version of the JBOSS open-source portal, implemented using Java (J2EE), Struts, Spring and an LDAP directory. Mr. Rhyne designed & implemented an XML-based data transfer schema that pulled data from a Siebel CRM solution. Mr. Rhyne also developed the user interface and brand, while working with the client to help define the requirements for both. Mr. Rhyne designed a flexible interface based on Web Standards that allowed several iterations of the interface to be implemented and reviewed live by the client.

MISSILE DEFENSE AGENCY (MDA)
Designed, developed and implemented a redesigned User Interface for the MDA Enterprise portal. First, Mr. Rhyne worked to develop policy and requirements redefining the MDA business processes for use of the portal. Then he developed of a custom Java/.NET application that conformed to the Pluggable Navigation Scheme in the BEA (Plumtree) AquaLogic User Interaction (Portal) and created an MDA enterprise brand including custom CSS and graphics. This required Mr. Rhyne to develop a solution for a Java/Oracle based portal and a .NET/SQLServer based portal simultaneously.

WHITE HOUSE MILITARY OFFICE (WHMO)
Designed, developed and implemented the ASMD database system for WHMO which catalogued personnel and Security Access Program (SAP) information. Duties included the development of a custom XML transfer protocol that mapped information from a MySQL database. This protocol was then used to view, edit and print information through custom Web application. The User Interface, application and transfer protocol was designed and implemented by Mr. Rhyne.

DEPARTMENT OF LABOR
Designed and help to develop the forms upload application for the DOL ERDS application. The ERDS system was a custom J2EE application that integrated with the Adobe PDF Forms Library and managed the submission of the LM-2 forms from labor unions. Duties included the design and development of a Struts web application which allowed labor unions to upload their electronic LM-2 forms into the ERDS system. After designing the user interface (conforming to the DOL web standards/branding guidelines) Mr. Rhyne managed a small team that developed the application.

FOUNDER & LEAD DESIGNER, DIGITAL ARCH DESIGN CORP., 2005 – PRESENT

Founded in 2005 after Mr. Rhyne was awarded a contract to port the Formatta Filler windows application to the Mac OS X platform. The application required the ability to reproduce a form with pixel precision identically between the two platforms. All drawing primitives were translated and transformed using the Quartz 2D framework & ATSUI text services.

From that start, Digital Arch has performed design & development services for several other companies, including a small business who plans to launch their VoIP Settlement application (voipsettlement.com) in

Winter of 2010. Digital Arch was contracted to design and development the application from scratch. VoIP Settlement provides secure escrow services to telecommunications companies domestic and abroad.

Mr. Rhyne has accrued experience in several development platforms during his work for Digital Arch, including Ruby on Rails, JRuby, Django, PHP (including CMS environments such as Expression Engine, and Drupal) and Java.

Small businesses are drawn to Digital Arch for their expertise in both design and development. This dual expertise allows them to lower costs and avoiding needless overhead intrinsic to the back and forth between separate designers and developers. Digital Arch also has applications currently in development for both the Macintosh and iPhone that it plans to debut later in 2009.

One such iPhone application is called Briefs, a toolkit for iPhone designer and developers. Briefs allow them to quickly iterate designs and concepts, then run them live on the device. More information can be found at http://giveabrief.com/.

RESEARCH SCIENTIST, NAVAL RESEARCH LABORATORY, 1998 – 2002.
Surface Electronic Warfare Branch, Tactical Electronic Warfare Division.

Worked on Network Centric projects that involved automated resource allocation of electronic attack resources among a distributed group of heterogeneous platforms. During this project, Mr. Rhyne developed extensive theory and software related to automated resource management, fuzzy logic, evolutionary programming and various visualization applications.

The original methods and results of this work were published in several peer-reviewed publications both nationally and internationally. Mr. Rhyne also presented these publications at numerous international conferences throughout the period. Included in these publications were 2 NRL technical formal reports, including one paper which received the Berman Research Publication award in 2001 for excellence in research.

Also during his term at the Naval Research Laboratory, Mr. Rhyne was cited by the Navy for contributions towards the Network Centric Project in 1999, 2000 and 2001.

education

Virginia Tech, Blacksburg, VA — B.S. Computer Science

honors & awards

Naval Research Laboratory Berman Research Publication Award Winner, 2001
Navy Cited Contribution Awards for Excellence, 1999-2001

professional affiliations

ADC Select Developer (and registered iPhone developer)
Usability Professional Association
International Society for Genetic and Evolutionary Computation
International Society for Information Fusion

publications

James F. Smith III and Robert D. Rhyne II, ”A Fuzzy Logic Algorithm for Optimal Allocation of Distributed Resources”, Fusion 99: Proceednings of the Second International Conference on Information Fusion, D. Zhu, pp 402-409, International Society of Information Fusion, San Jose, 1999.

James F. Smith, III and R. Rhyne, II, “A Resource Manager for Distributed Resources: Fuzzy Decision Trees and Genetic Optimization,” Proceeding of the International Conference on Artificial Intelligence, IC-AI’99, Las Vegas, Nevada, USA, June 28-July 1, 1999, pp 669-675, CSREA Press.

James F. Smith III and Robert D. Rhyne II, “Fuzzy logic based resource allocation for isolated and multiple platforms", Signal Processing, Sensor Fusion, and Target Recognition IX, I. Kadar, Vol. 4052, pp. 36-47, SPIE Proceedings, Orlando, 2000.

James F. Smith III and Robert D. Rhyne II, “Genetic algorithm based optimization of a fuzzy logic resource manager for electronic attack", Data Mining and Knowledge Discovery II, B. Dasarathy, Vol. 4057, pp. 62-73, SPIE Proceedings, Orlando, 2000..

James F. Smith III and Robert D. Rhyne II, “A Fuzzy Logic Resource Manager and Underlying Data Mining Techniques”, Fusion2000: Proceedings of the 3rd International Conference on Information Fusion, R. Reynaud, Paris, France, July 10-13, 2000, Vol. II, pp. WEB1-3 – WEB1-9, International Society of Information Fusion.

James F. Smith, III and Robert D. Rhyne, II, “Genetic Algorithm Based Optimization of a Fuzzy Logic Resource Manager: Data Mining and Co-evolution,” Proceeding of the International Conference on Artificial Intelligence, IC-AI’2000, H. Arabnia, Vol. I, pp 421-428, Las Vegas, Nevada, USA, June 2000, CSREA Press.

James F. Smith III and Robert D. Rhyne II, ”Optimal Allocation of Distributed Resources Using Fuzzy Logic and a Genetic Algorithm”, NRL Formal Report NRL/FR/5741-00-9970, Naval Research Laboratory, Washington D.C. 20375-5000, September 29, 2000.

James F. Smith III and Robert D. Rhyne II, “Fuzzy Resource Manager: Tree Structure and Optimization”, SPIE Proceedings, Orlando, FL, April 2001

James F. Smith III and Robert D. Rhyne II, “Knowledge Discovery through Games and Game Theory”, SPIE Proceedings, Orlando, FL, April 2001

Robert D. Rhyne, II, and Dr. James F. Smith, III, “A Game Based Approach to Co-evolutionary Optimization,” Proceedings of the Genetic and Evolutionary Computation Conference, GECCO-2001. Spector, L., E. Goodman, A. Wu, W.B. Langdon, H., M. Voigt, M. Gen, S. Sen, M. Dorigo, S. Pezeshk, M. Garzon, and E. Burke, editors. San Francisco, CA: Morgan Kaufmann Publishers, July 2001, pp. 908

James F. Smith, and Robert D. Rhyne, “Methods of Automated Rule Discovery for Decision Support that Exploit an Opponent's Uncertainty,” Fusion2001: Proceedings of the 4th International Conference on Information Fusion, Dr. Elisa Shabazian, Vol II, pg. ThA1-3 Montreal, Canada, August 6-9, 2001, International Society of Information Fusion.

James F. Smith, and Robert D. Rhyne, “Fuzzy logic resource manager: fuzzy decision logic and validation,” Fusion2001: Proceedings of the 4th International Conference on Information Fusion, Dr. Elisa Shabazian, Vol II, pg. ThB3-3 Montreal, Canada, August 6-9, 2001, International Society of Information Fusion.

James F. Smith, and Robert D. Rhyne, “Fuzzy Rule Determination By Co-evolutionary Data Mining,” Fusion2001: Proceedings of the 4th International Conference on Information Fusion, Dr. Elisa Shabazian, Vol II, pg. ThA1-11 Montreal, Canada, August 6-9, 2001, International Society of Information Fusion.

James F. Smith, III and Robert D. Rhyne, II, “Methods of Automated Rule Discovery in a Multi-agent Adversarial Distributed Environment,” Proceeding of the International Symposium on Information Systems and Engineering, ISE 2001, Waleed W. Smari, Nordine Melab, Kokov Yetongnon, pg. 25, Las Vegas, Nevada, USA, June 2001, CSREA Press.

James F. Smith, III and Robert D. Rhyne, II, “Co-evolutionary Data Mining to Discover Rules for Fuzzy Resource Management,” Proceeding of the International Conference on Artificial Intelligence, AIC 2001, H. Arabnia, Vol I, pg. 380, Las Vegas, Nevada, USA, June 2001, CSREA Press.

James F. Smith, III and Robert D. Rhyne, II, “Fuzzy Logic Resource Manager: Decision Trees and EA Model,” Proceeding of the International Conference on Artificial Intelligence, AIC 2001, H. Arabnia, Vol I, pg. 476, Las Vegas, Nevada, USA, June 2001, CSREA Press.

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* James F. Smith III and Robert D. Rhyne II, “Fuzzy Logic Resource Management and Co-evolutionary Game Based Optimization”, NRL Formal Report, Naval Research Laboratory, Washington D.C. 20375-5000, September 2001.

* denotes Berman Award paper.