

Scott E. Preece

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Overview

I am an experienced software professional dedicated to creating innovative solutions through the application of effective software architecture and design practice, development methods, and broad technical knowledge. My career spans all aspects of software development, from coding and testing to project management, software architecture, and methodology, from consumer devices to large SaaS systems. Collaboration and communication are key skills for me. I enjoy writing and presenting technical material, working across teams, and working with other companies. I thrive on working with innovative people and learning new technologies.

Chronology

Software Architect, iContact, Raleigh, NC [April 2011 – March 2012]

As a member of the Labs team, worked on evolving the LAMP-based architecture of the iContact e-mail marketing SaaS application to improve scalability for their rapidly growing user base.

- Rewrote PHP tracking-event processing code to batch and aggregate events, cutting worst-case latency from hours to seconds.
- Formed team to improve mailing-list upload performance and drove progress.
- Worked with UX team and developers to implement new-user tutorial feature.
- Led work to rearchitect publishing and tracking as the company expanded from e-mail marketing to include social-communication channels, creating domain-model ERD and UML diagrams.
- Led work on defining the architecture process.
- Worked with development teams to solve architectural problems and align their designs.
- Co-authored a set of composable software components for building message-based capabilities in PHP in the style of *Enterprise Integration Patterns*.

Architect, Data Pipeline, Yahoo!, Champaign, IL [July 2010 – December 2010]

Designed, implemented, and verified new feeds within Yahoo! ETL pipeline and defined evaluation criteria for technology selection for cloud-services dashboard and self-service support tool.

Architect, Categorization Platform, Yahoo!, Champaign, IL [October 2007 – June 2010]

Provided technical leadership in developing a scalable software platform for building machine-learned, Hadoop Grid-based categorization solutions, radically reducing cycle time for researchers.

- Designed product architecture and led review by group architects and customers.
- Implemented and extended C++ feature-extractor and entity-extractor components.
- Worked with customer teams to determine needs and design corresponding solutions.
- Evangelized use of the platform to teams across the company.
- Wrote job descriptions and interviewed applicants for staff expansion.
- Prepared and presented training and review presentations to cross-group audiences.
- Served as ScrumMaster and drove process improvement for development team.
- Led creation of cross-team technical collaboration effort for Champaign site.

Linux OS Architect, Motorola Mobile Devices, Champaign, IL [January 2005 – October 2007]

Provided technical leadership to development teams, collaborated with industry forums, and participated in Linux-Java platform architecture governance.

- Provided technical input, evaluation of alternatives, and review feedback at all stages of development of the power-management solution for Linux-based handsets.

- Represented Motorola in multiple consortia, chairing working groups and driving APIs. As a member of the architecture team for the MotoJUIX Linux-based phone platform, collaborated on defining, architecting, promoting, and implementing the platform.
- Specified UI requirements, edited the platform Software Architecture Specification, and connected Consumer-Experience Design with UI software development.
- Designed Java API for notification mechanism.
- Trained platform development team in mobile phone architecture and requirements.

Software Architect, Application Environment, Motorola Mobile Devices, Champaign, IL

Collaborated as member of core architecture team on designing and implementing the software platform shipped in hundreds of millions of handsets.

- Defined software architecture for event handling and later became lead architect for the application environment; documented and taught the architecture to developers.
- Worked across teams to design Motorola's first usability-driven mobile user interface.
- Championed use of high-level abstractions to encapsulate complex UI behaviors.
- Defined feature-architecture process and participated in defining other processes.
- Worked with consortia and university researchers on methodology improvement.

Development Manager, Motorola Computer Group, Urbana, IL

Managed 25-person development group, organized as three teams, doing real-time, GUI, and multiprocessing functionality development for Unix microcomputer systems.

Represented Motorola in standards organizations and industry forums, working on multiprocessing, graphical user interfaces, and other APIs; chaired the IEEE GUI API standards committee.

Software Engineer, Architect, and Development Manager, Gould CSD, Urbana, IL

Led 20-person Software Architecture unit with technical responsibility for specification, test, and review of all new functionality in Gould minicomputer Unix products.

Led 30-developer project adding real-time functionality to Unix products.

Senior Research Programmer, Coordinated Science Laboratory, University of Illinois, Urbana, IL

Created and ran research project exploring use of spreading-activation-network models for information retrieval, automatic indexing, and clustering.

Performed and supervised research in information retrieval; designed and built retrieval systems; supervised student programmers, and functioned as chief programmer.

Participated as research-group member, designing research projects, writing grant proposals and reports, and writing and presenting papers at technical conferences.

Research Programmer, IIT Research Institute, Chicago, IL

Designed and implemented major enhancements to search system for subscription-based retrieval service, adding new capabilities and doubling search performance.

Technologies

Programming Languages: C, C++, PHP, Common Lisp, Javascript, Java, Perl, awk, Unix/Linux shell, assembly, PL/I

Database Technologies: MySQL, MongoDB, Redis, Oracle, ERDs

Web Development: HTML, CSS, ember.js, jquery, require.js, Cold Fusion Log4j, Apache, XML, JSON, Firebug, Chrome, DOM, RESTful web service APIs, AJAX

Grid Technologies: Hadoop MapReduce, HDFS, PIG, Oozie

Search and Machine Learning: Solr, SVM, GBDT, LibLinear, spreading activation

Build Technologies: make, continuous integration, Hudson/Jenkins, Maven, Ant

Debugging/Performance/Profiling: GDB, Clover, Coverity, Valgrind

Testing: TDD, JUnit, gCov, TestNG, CPPUnit, CXXTest, PHPUnit

Software Methodologies: Agile methods, CMM-driven formal process, UML, StateCharts, MSCs

Version Control Tools: RCS, CVS, Subversion (SVN), Rational ClearCase

Operating Systems: UNIX, Linux, MacOS, Windows

Documentation Tools: JavaDoc, Doxygen, PHPDoc, various wikis

Training: Certified ScrumMaster, CM, SQA, OOP, UML, ObjecTime, security, YUI, ISO and SEI/CMM audits

Papers: 50+ publications, internal papers, and presentations (full list available on request)

Foreign Languages: French

Recognitions

- Granted three utility patents in user interaction and radio management; five applications pending.
- Named to Motorola Science Advisory Board Associates (top 2% of Motorola engineers).
- Chaired cross-business-unit Motorola Software Engineering Technology Steering Committee.

Education

PhD Computer Science - University of Illinois at Urbana-Champaign
Thesis: *A Spreading Activation Network Model for Information Retrieval*

SM Information Science - University of Chicago

AB Mathematics (Computer Science) - Dartmouth College