TIMOTHY H-J. YAO (TIM)

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Qualifications Summary

Highly adaptable, technology-knowledgeable and creative software engineer with superb planning, team leadership and organizational skills. Areas of interest and expertise include systems engineering, software testing and test automation, software reliability, project management, tools development, information architecture, web design and web application design.

Professional Experience

10/00-present: ***Distinguished Member of Technical Staff, Lucent Technologies, Naperville, IL.***

Technical lead of the Lucent Softswitch (LSS) Stability Test team. Led team to develop and implement stability index (SI) to provide trending measurements of LSS system stability to help drive the project to stability and provide insight to project management. Developed fuzzy method for assessing uncertainty in the SI, providing a useful context for data from less costly partial stability runs.

Technical lead of the operations load generation test automation project. Led team to develop WinRunner programs to apply an operational profile load on the LSS. Introduced a method to make scripts portable between different labs. Deployed and administered Concurrent Versions System (CVS) change control system.

Call Processing Solutions System Engineer. Created and led the Technical Leadership team, a diverse networked community comprising the Consulting Members of Technical Staff (CMTS) and Distinguished Members of Technical Staff (DMTS) to leverage improved communications, shared expertise and a common focus in solving the complex technical problems facing the lab.

Application Planner coordinating all testing and integration activities for a major packet switch development project. Created a process to ensure that testing teams worked on a common weekly combination of the diverse component loads. Built and maintained project communications infrastructure. The project successfully met its planned General Availability date despite short schedules, significant architectural changes and staff turnover.

Led the tools sub-team for a resource pooling initiative to ensure swift and full staffing of projects making use of mentoring and cross training. Wrote requirements for, and coordinated the development of, a "Job Jar" web database application for managing the advertisement and filling of internal jobs to help optimize use of resources across the lab.

Co-led a team researching the use of XML and SOAP for lightweight OAM&P integration across diverse switch platforms.

10/97 - 10/00: Member of Technical Staff, Lucent Technologies, Inc., Naperville, IL.

Application Planner coordinating all testing activities for major switching development project to establish Integrated Voice Telephony over ATM (iVTOA): this project involved over 500 people. Co-author and editor of the Application Integration Plan for iVTOA coordinating test coverage of requirements, feature interactions and end-to-end

scenarios by many test teams. The Healthcheck team called the iVTOA testing effort one of the best-planned ones they had ever seen.

Co-led the team defining the feature scope for support of local services. Co-authored system requirements for the new element management system (EMS) in an early time of need. Webmaster for the iVTOA project website. Key member of the dept AA/Diversity committee for the Unwritten Rules activity. Co-leader of the dept Intranet committee. Co-creator and instructor for a two-day class: Practical Perl for Software Testing.

Performed software feature testing for the 5ESS North American Region (NAR) Long Distance Platform (LDP). Authored the second version of the LDP Application Interaction Plan. Coordinated testing of feature interactions between Feature Test and Product Evaluation Testing organizations. Laid the groundwork for LDP test automation, developing with a team requirements for a framework for automated test execution. Drove the progress of the LDP test automation team.

Co-authored Requirements Test Plans. Created and organized the Feature Test Workshop (a Quality Improvement Story) to improve feature test. Led the effort to semi-automate regression tests. Ported tools to the Exptools distribution (a Lucent and AT&T open source collaboration). Co-developed an object-oriented Perl module interface prototype to a recent change apptext tool for more efficient lab testing.

09/95 - 08/97: Senior Engineer, Impact Forecasting, L.L.C., Chicago, a joint venture between Aon Risk Technologies, Inc (Chicago) and ISEC (San Francisco).

Led initial development of probabilistic methodology for a new risk analysis software package, writing requirements, developing software prototypes and participating in design reviews, code inspections, and test plan reviews. Led development of a parametric envelope method for efficiently predicting maximum wind speeds at a site due to hurricane loading. Contributed risk and reliability analysis expertise to several site-specific analyses.

10/94 - 09/95: Consulting researcher, Beachwood, OH.

Collaborated with several professors on various research projects. Presented a paper at the joint NAFIPS/NASA/IFIS conference on neuro-fuzzy technology.

09/93 - 09/94: Visiting Researcher, Dipartimento di Meccanica Strutturale, University of Pavia, Pavia, Italy.

Researched the application of fuzzy logic to active structural control. Co-authored and presented several papers, including one at the First World Conference on Structural Control.

09/86 - 05/93: Research Assistant, Department of Civil Engineering, University of Illinois at Urbana-Champaign.

Developed software for Monte Carlo simulation of a steel jacket-type offshore platform subjected to hurricane loading. Developed a numerical method for reliability analysis of structures subjected to time-variant loads.

09/83 - 08/86: Research Assistant, U.S. Army Construction Engineering Research Lab (CERL).

06/83 - 08/83: Engineering Aide, U.S. Army CERL.

Education Overview

1997 – present:	Classes include Adv. WinRunner, ATM Fundamentals, TCP/IP, Voice over IP, Software Reliability, XML, Adv. Perl, ASP (IN), Automated Software Testing, Quality Improvement Story, System and Integration Testing, TestMaster, Patterns Overview, Telephony, AT&T Switched Network.
06/95:	Object Oriented Analysis and Design, a five-day short course.
08/87 - 5/93:	Ph.D. in Civil Engineering, University of Illinois at Urbana-Champaign; Thesis: Response Surface Method for Time-Variant Structural Reliability Analysis
05/86 - 08/87:	M.S. in Civil Engineering, University of Illinois at Urbana-Champaign
09/82 - 05/86:	B.S. in Civil Engineering (Honors), University of Illinois at Urbana-Champaign

Skills

Languages: Perl (including object-oriented), C, WinRunner TSL, Fortran, MATLAB, tcsh, bash, ksh, sh, php, Visual Basic, SQL

WWW: Information architecture, web design with CSS stylesheets, CGI programming (including database applications), and SSI

Markup Languages: XML, HTML, SGML, LaTeX

Computer OS: Expertise with UNIX (Solaris, Linux) and Windows (2000, XP)

Awards

Lucent 4A Outstanding Business Results (2000), W. Mackay Award (1986), Knight of St. Pat (1986).

Papers and Patents Pending (partial list)

- Yao, Timothy H-J. and Michael M. Wu (2002), "Using fuzzy-neural systems to improve e-mail handling efficiency," patent pending filed by Lucent Technologies, 2002.
- Yao, T., E. Guzman, J. Wallace and L. Algee (2000), "A View from the Trenches: Lucent's Intranet," presentation at Lucent Webtech 2000.
- Yao, T. and D. Parekh (1999), "Lessons from yet another test-automation-on-the-side effort," presentation at the Lucent Automated Software Testing conference.
- Daneshvaran, S., T. Yao, R. Morden, Y.K. Wen, M. Zadeh (1997), "A Parametric Model for Efficient Hurricane Risk Analysis of Large Portfolios," International Conf. On Structural Safety and Reliability.
- Casciati, F., Faravelli, L. and Yao, T. (1996). "The Effects of Nonlinearities upon Fuzzy Structural Control," Nonlinear Dynamics, 11, 171-187.
- Yao, T. H-J., and Wen, Y-K. (1996). Response Surface Method for Time-Variant Reliability Analysis. Journal of Structural Engineering, ASCE, 122(2), 193-201.

Complete list of publications available on request.

Community Involvement

Volunteer, Mill St. School, 9/02-present.
Member, Kishwaukee Community College CIS department advisory board, 9/01-present
Webmaster, Century Farms Neighborhood Association (http://www.centuryfarms.org), 9/99-present
Webmaster, Rosehill Montessori School, 9/00-5/02