Richard Skeirik (Sky' rick)
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Process &
Process Systems Engineer
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PROCESS AND PROCESS SYSTEMS ENGINEER with 22 years experience in DuPont developing process control/management solutions above DCS/historian on Vax/VMS, supporting chemical manufacturing; ten years experience building Windows e-business operations using Visual Studio, VB, ASP.NET and SQL on Microsoft databases.

Created, designed and coded two real-time systems for supervisory control, optimization and modeling, deployed throughout DuPont, running above DuPont's historian/DCS systems. Developed a monitoring and control system to implement Statistical Process Control (SPC) by automating Shewhart and Cusum charting. Developed and implemented real-time inferential estimators running above historians. Designed and implemented many process control applications to reduce variability, save energy and ingredients, and reduce emissions, saving a total of over $5 million. Invented and patented systems structures to integrate expert systems and neural networks into process historian and process control systems. 10 years experience acting as technical specialist to 6-sigma teams addressing manufacturing improvements.

Key Systems Experience:

Historians: DuPont Vantage; DuPont Infotrol; Aspen IP21
Control Systems: Bailey DCS; Honeywell TDC 2/3000; DuPont PACE*; DuPont ASPECT*
Development Platforms: Windows/Visual Studio ASP.Net; Vax/VMS
Languages: VB, SQL, HTML, Fortran, DCL
Simulators: Hysys, SimSci Process; DuPont CPES, DuPont TMODS, Custom Fortran*
Mathematical Tools: Matlab; IMSL, Aspen Multivariate
* Systems I designed & coded

Career Overview, Newest to Oldest:

10 years	E-Business owner and IT developer; ASP.Net VB SQL
10 years	Process control consultant, DuPont Engineering
7 years	Manufacturing Systems Development, DuPont Info Systems
5 years	R&D and Manufacturing Engineering, DuPont Petrochemicals

Selected Project Accomplishments

E-Business Automation - I design; code in VB on ASP.net and SQL using Visual Studio; and maintain a fully automated e-business system. The system includes custom online payment, automated order processing, purchase history, reporting, and communications. In parallel, I run a large email list with automated subscription processing, serving 10,000 subscribers. I run two internet facing windows servers and a number of networked workstations.

PACE Supervisory Control, Expert Systems Platform - I designed and coded a system (PACE) for building and deploying supervisory and internal model/statistical process control (SPC) functions with integral expert systems. This system fully integrated with DuPont's historian/DCS and laboratory platforms, and I deployed and supported this software in about a dozen plants within

DuPont. It offered expert systems, feedforward/feedback control; internal model control, automated SPC charts; and natural language notifications for process operators. The expert systems used a simple way to build expert systems for real-time manufacturing support that I invented, and I secured 7 US patents covering this work.

ASPECT Neural Inferential Model Builder/Runner - As an enhancement to PACE (above), I created, coded, deployed and supported the application ASPECT which used DuPont's historian data to build, and then implement online, neural network estimators for process values. Like Pavilion's Soft Sensor product, it could be used to improve quality by estimating online values which are difficult to measure. I created new approaches to mine process historian data, build data sets and neural network models, and implement these as real-time estimators, and I secured 10 US patents covering this work. All 17 of these patents were later acquired by Pavilion.

Historian based-Models - Mined process history data and built first-principles models to run in real time to estimate critical quality values which are difficult to measure.

Process Control Solutions - Analyzed process dynamics and designed/implemented numerous process control improvements in large continuous chemical manufacturing processes.

Laboratory Automation - Specified and installed systems to collect/analyze laboratory instrument data - one manufacturing control lab and one R&D Lab - with integration to the process historian.

Research & Manufacturing Support – 5 years as process research engineer and manufacturing support engineer in continuous chemical processes.

Professional Experience

Founder/President/IT resource		Dalkeith Press, Inc.	2004-Pres
Litigation Consultant/Expert Witness		Independent Consultant	2001-2008
Consultant	Process Control	DuPont Engineering	1994-2004
Sr. Specialist	Manuf. Software Support	DuPont Info Systems	1987-94
Sr. Area Engineer	Manufacturing Support	DuPont Petrochemicals	1984-87
Engineer	Process R&D	DuPont Petrochemicals	1982-84

Education

MS Chemical Engineering, Michigan State U, 1981
BS Biochemistry, Michigan State U, 1978
Graduate Certificate Sport Psychology, Capella U, 2004

Professional Development

33 Professional Development Hours: 2012-14
AIChE Process Development Symposium - 2012
Registered Engineering Intern, State of Delaware - 2007
Six Sigma Green Belt Training - 2004
Using Process Surveyor (Control Monitoring) - 2003
Conceptual Design of Chemical Processes - 2001

Publications:

12 Formal DuPont Technical Reports
8 Technical Presentations/Journal Articles (plus one to be submitted)
17 US Patents; 6 Psychology-related books