

# HANK FLY, MSCS, CSDP

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## TECHNOLOGY INNOVATION, SOFTWARE ENGINEERING

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**Professional software engineer passionate about process improvements and producing rapid and sustained engineering results.**

- Expert in leading the development and implementation of emerging technologies to increase productivity while streamlining efficiency.
- Possesses a wide breadth of software development experience in many roles which allows for total objectivity in assessing all IT projects and recommending successful solutions to business challenges.
- Exceptional documentation, presentation, staff development, training, and leadership skills. Authored numerous plans, documents, procedures, standards, policies, guidelines, overviews, assessments, white papers, presentations, reports, and templates.
- Holds a Masters Degree in Computer Science, as a foundation for fusing business and technology to further the development of societal needs.

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## RESEARCH INTEREST AREAS

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- **Knowledge Management** - My chief interest lies in the manner in which information and more importantly, knowledge is shared within software development projects, particularly those which could be characterized as un-disciplined. Disciplined projects are those where there are tight requirements on the development process due to the customer demands. In the commercial arena, there is little oversight and therefore, a great deal of inefficiency. The Cognitive Work Analysis (CWA) framework offers some potential in examining the knowledge management within a project, but some attention must be paid to the individual workplace ethics as a strong place in abstract constraints.
- **Applied Ethics Education** - My thinking is that neural networks or operations research in concert with CWA may be an area to investigate as providing insight into the issues surrounding knowledge management (KM) in commercial software development projects. I may also be interested in investigating modernity applications of ethics and its education as a key part of the problems in these KM areas. The largest effort in these topics will probably be in determining a measurement set to quantify the nature of the problems and results from changes to the project's information culture. I see this as a very large part of the overall issue, and a major area of interest.
- **Health Information** - From a social perspective, I have a strong passion in the area of information policy regarding health information, particularly cancer related (from personal experience). I think this area regarding public dissemination of coordinated cancer information is ripe for research both from a medical practitioner and patient viewpoints.

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## AREAS OF EXPERTISE

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**Software Engineering • Risk Management • SQE • SCM • Integration & Test  
Business Requirements Analysis \* SW Requirements Analysis • Project Planning • Project Management**

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|------------------------------------|-------------------------------------|-----------------------------------|
| ➤ Software Reliability Engineering | ➤ Software Sizing                   | ➤ Requirements Analysis           |
| ➤ FDA 21 CFR 11, 21 CFR 810        | ➤ Fagan Inspection Process          | ➤ CMM, CMMI, ITIL                 |
| ➤ Test Planning & Integration      | ➤ Quality Assurance                 | ➤ Formal Test                     |
| ➤ ISO 9001                         | ➤ Software Lifecycles               | ➤ Configuration Management        |
| ➤ Software Management              | ➤ Iterative Development             | ➤ Quality Engineering             |
| ➤ COCOMO II                        | ➤ Software Metrics, Function Points | ➤ Rapid Development & Prototyping |
| ➤ JAVA                             | ➤ NetBeans 5.0                      | ➤ JavaScript                      |
| ➤ Actionscript                     | ➤ Macromedia Flash                  | ➤ Agile Methods                   |
- **Certificates:** IEEE Certified Software Development Professional
  - **Business Analysis:** over ten years direct experience in developing analyzing reviewing business processes and requirements. Business requirements developed, reviewed and traced to software requirements for military applications (US Army & US Air Force), healthcare software, federal government systems (NASA, IRS), state government systems (WA – WAMMIS project), and shipping (DHL).
  - **Communications:** over ten years experience in preparing and delivering presentations to customers, developers, and other stakeholders on business requirements analysis, flow-down to system and software requirements, basis as project estimation and planning, flow-down to system and user testing activities. Five

years experience in preparing and conducting classes on business requirements solicitation, documentation, risk management, and all aspects of software engineering.

- **Documentation:** Expert in creating, modifying, and using document templates, guidelines, and standards for us in creating systems from business requirements. Expert in using UML, Structured Analysis, and other techniques in creating system requirements, and detailed software requirements.
- **Prototypes/Simulations:** Over ten years experience in creating prototypes of user interfaces from, or in support of business requirements development. Experiences in simulating traffic flows, conducting performance and throughout analysis using Monte-Carlo techniques. Experienced in using modeling to produce project plans and analyze project risks. Five years experience in creating reliability models for planning testing to establish reliability resting from business requirements.
- **Testing:** Over ten years experience in all aspects of unit, system, and integration testing; including formal test suites for customers of all ranks. Worked on embedded systems, client-server, multi-tier, WEB-centric, and distributed database testing. Created tests using manual methods, scripts, custom tools, and automated test tools.
- **Work Mode:** self-directed individual contributor with over ten years managerial experience. Excellent in working with teams, and communicating status, results, risks, plans to higher levels of management and customers.
- **References:**
  - Pip Nelson (DHL Project Manager); managed the Training & Documentation group; [pip.nelson@dhl.com](mailto:pip.nelson@dhl.com) , [nelson.pip@gmail.com](mailto:nelson.pip@gmail.com) , 602.768.0543 (cell)
  - Bill McGirr (formerly DHL Director, currently Countrywide Mortgage Director); manager of the QA, test, training, and documentation groups; [bill.mcgirr@gmail.com](mailto:bill.mcgirr@gmail.com) , [Bill\\_McGirr@Countrywide.Com](mailto:Bill_McGirr@Countrywide.Com)
  - Gary Schoenbaum (Coldwater Creek, Inc, Manager); Manager of the Seattle Development Office and project manager of the EIM project; [Gary.Schoenbaum@thecreek.com](mailto:Gary.Schoenbaum@thecreek.com) , 208-255-9138 (cell)
  - Beth Kennedy (DHL co-worker, currently Project Manager at a law firm); performed department project planning at DHL, [BethKennedy07@cox.net](mailto:BethKennedy07@cox.net) 602.301.6837 (cell)

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## CAREER DEVELOPMENT

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**Principal Consultant** - Software Project Guardians, LLC, at DHL(Lead Instructional Designer), CNS-Inc Lacey, WA(Lead Quality Engineer), and Coldwater Creek, Seattle (Lead Quality Engineer). Oct 2003 to Present

Currently performing process improvement efforts (Coldwater Creek) while performing benchmarking and white-box testing on a Web-centric database system (Windows XP, 2005 Server, SQL Server, Oracle 9). Evaluating and refining requirements and customer perspectives for validation. Creating classes on software engineering topics along with standards and guidelines for more formal processes. Performing traditional SQA duties on a managed healthcare system for DSHS, Washington (Windows XP). Reviewing business and functional requirements, performing requirements analysis and traceability/testability analysis. Working on process improvements toward CMMI Levels 2 &3. Working with DHL in creating and implementing systems development process improvements (Windows 2k, 2k Server, SQL Server). This involved creating standards, templates, guidelines, and all training materials as well as performing classroom training.

- Used ToolBook, Flash, and Fireworks to create custom training materials for classroom and WBT..
- Delivered classroom training to over 1180 seats in 9 months on all aspects of software engineering and project management, including tailoring and Agile Methods.
- Created and delivered custom classes on Function Points, CMM, CMMI, ITIL (IT Service Management), process tailoring, and requirements traceability.
- Developed strategies for client software project reviews, budgeting, reports, and contracts.

**Misys Healthcare Systems (Formerly Sunquest Information Systems)**, Tucson, AZ Nov 2000 to Apr 2003

Directed the software configuration management, quality assurance, builds, and integration of Misys client-server products (Windows 2k, Windows XP, Windows 2k Server) for this software development firm with five locations and 1200 employees. Managed product integration based on business requirements of (and budgets) for hospital patient record database systems including new product lines in radiology and pharmaceutical records. Active in the SEPG in defining processes and methods for FDA, ISO 9001:2000, and CMM compliance including coordination of requirements, design, and testing.

- Produced software quality assurance standards and procedures, and numerous document templates.
- Developed and implemented strategies in operations research, software reliability, requirements management, and quality engineering.
- Evaluated risk and reliability engineering tools and methods, improved requirements definitions, and customized use of Rational Rose, Requisite Pro, and COCOMO II for life-cycle formalization.
- Evaluated product requirements and processes for Windows XP security policies, HIPAA compliance, and Information Assurance methods.
- Revised metrics programs using Agile Methods to increase effectiveness by identifying and changing lifecycle process problems.

- Coordinated quality assurance and configuration management efforts with India development organization and three US offices.
- Implemented procedures and processes along with controlled baselines and defect monitoring for the entire company resulting in the company passing the ISO 9001 and FDA audits with very few exceptions.
- Established controls within configuration management and SQA reducing defects correction times among new product installations from in final test from four months to one month.

**Principal Software Engineer (Security Clearance)**, Raytheon Missile Systems, Tucson, AZ

May 1999 to Nov 2000

Performed analysis of applications and requirements for a Navy-guided, projectile-embedded system for this mammoth developer of advanced missiles with 8,000+ employees and 40 missile programs (Windows 98, Windows 2k, UNIX BSD – C Shell). Supervised team of four engineers, conducted system testing in a UNIX environment running MATLAB, prepared custom scripts for regression testing and analysis, and coordinated integration efforts with multiple groups. Worked closely with Navy customers on interpreting and testing user requirements.

- Performed data analysis on Windows NT operating system using Probe tool (telemetry analysis), Excel, and Access DB scripts.
- Created test planning and procedure standards for SQA comparisons, and implemented script-driven strategies for semi-automated test methods.

**Senior Software Analyst - MCI/Worldcom**, Colorado Springs, CO

Sep 1995 to May 1999

Performed all integration and business requirements analysis for an advanced call handling and switching system for this multi-billion dollar telecommunications firm with 7,000+ employees which earned a US patent (#6,427,002 B2). Created an NGSN architecture and integration project plan for and trained engineer staff on the call routing subsystem tailored to clients (Windows 98, 95 Server). Created and documented functional requirements and subsequent integration and user testing.

- Using UNIX C-Shell, created applications and performed all systems integration functions including the coordination of integration testing and program development which resulted in the system going live at four sites and handling over one million calls per month.
- Maintained two (2) existing telecommunications systems and created four (4) new switching and routing systems for sixteen (16) Beta customers. Used Agile Methods in test development and implementation.
- Performed extensive test support, design, and requirements review for a customized GUI tool for 4GL telecommunications development including the development of a CM Plan, reuse plan, deployment documents; defect management; and staff training.
- Used Access, CMVC, UNIX, and Windows tools to develop and organize requirements and code development of telecommunication system. Implemented SEI Level 2 guidelines for a SQA, SCM, and requirements Key Process Areas.
- Recipient of MCI Technical Leadership Award (1999).

**SEPG Lead – Boeing Corp**, Vienna, VA

Jan 1994 to Sep 1995

Assigned to an ARMY systems project as the lead for a Software Engineering Process Group (SEPG), tasked with getting the organization up to CMM levels 2 and 3 (Windows 95). Managed a team of six on the SEPG team, and directed the interpretation of the CMM to the project. Reviewed proposed and purchased tools on the project for CMM compliance and usage. Reviewed and interpreted Mil-Standards (2167A, 1521B) as related to CMM. Outsourced training for the staff (about 1200 on the project with about 120 software engineers) from local vendors.

**Section Head / Software Integration Analyst – Software Engineering**, Grumman Corporation, Reston, VA

Aug 1989 to Jan 1994

Supervised 16 engineers in support of software requirements analysis for Space Station Freedom—a contract to provide engineering oversight of the entire Space Station development effort—for this defense contractor with 1500+ employees (Windows, Sun SparcStation). Developed test plans, procedures, reports; performed requirements analysis, all SQA and SCM functions; and worked with developers on problem resolution. Worked closely with NASA in evaluating schedules, work progress, and risk analysis of all test plans, procedures, and reporting requirements.

- Analyzed robotics system using a CASE tool; prepared presentation for NASA identifying approaches to reduce risk which they embraced and approved; and developed and taught training program to all engineers and NASA managers.
- Performed modeling (SES Workbench) and technical analysis of closed-loop control systems and initialization processes.
- Wrote standards and performed SQA function for all modeling efforts, including training staff on review processes.
- Provided requirements and design analysis: SQL in Informix DBMS, integration and test analysis for client/server architecture (C used).
- Presented a successful PDR & CDR for Space Station Freedom presentation which was carried live on the NASA channel.
- Recipient of NASA Certificate of Appreciation Award (1995).

**Group Leader & Chief Programmer, SPC Liaison – Harris Corporation**, Melbourne, FL & Reston, VA

Dec 1981 to Aug 1989

From 1981 to 1986, worked in a matrix organization as a Group Leader and Chief Programmer on 2 projects (Windows 3.1, Dec, DG). Wrote one small proposal (\$65 K, approved and implemented), and authored sections on two very large US Air Force projects (both awarded and implemented).

From 1987 to 1989 acted as Harris Corp liaison to the Software Productivity Consortium working on various process improvements and efficiency metrics for the 16 partner companies.

**Computer Communications Officer, Sat Comm Technician – US Air Force**

May 1974 to Dec 1981

Officer In Charge of a small section developing custom real-time operating systems for base Comm Centers at strategic bases in the US. Wrote approximately 10,000 lines of assembly code and supervised 3 NCOs, 3 civilians, and 2 vendors. Installed the system at three bases in the US. Satellite technician maintaining satellite ground stations (Staff Sergeant).

## TECHNICAL QUALIFICATIONS

**HARDWARE:** \* PC Hardware Configuration Operating Systems: \* Windows XP, XP Professional, 2000, 98, 95 \* UNIX (BSD, C Shell, AIX, Sun, Apollo) \* Linux (Redhat 7.2) \* VMS \* DG VS  
**LANGUAGES:** \* C \* VB \* Ada \* Fortran \* ICON Development Tools: \* Rational Rose (UML) \* Requisite Pro \* MS FrontPage \* CA/Harvest \* MS Visio 2000 \* Visual Studio \* Cadre/Teamwork-SA (Requirements Analysis)  
**PROJECT MANAGEMENT TOOLS:** \* MS Project \* MS Access \* Siebel \* MS Office \* MS Outlook \* PSM Insight  
**MODELING / SIMULATION / ESTIMATION:** \* COCOMO II \* PQM Plus (Function Point) \* SES / Workbench \* MS Excel \* MatLab \* Simulink \* Revic \* SoftEst \* SMERFS \* Construx \* PQM Plus  
**SECURITY:** \* ASSET \* Windows XP Pro MMC \* Ethereal \* SuperScan  
**ANALYSIS:** business process, business requirements, functional requirements, system & software requirements, reliability, risk, sizing, effort estimation.

## EDUCATION

Colorado Technical University, Colorado Springs, CO      Idaho State University, Pocatello, ID  
 MS Degree in Computer Science (1998)      BS Degree in physics

## CERTIFICATIONS / STUDIES

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|---|---|
| ➤ ITIL (IT Service Management) (2005)                                 | ➤ Macromedia Flash MX (2004)  |
| ➤ Prince 2 (2004)   | ➤ Information Mapping (2004)  |
| ➤ CMMI Intermediate & CMMI Instructor (2003-2004)                     | ➤ IEEE Certified Software Development Professional (IEEE #40328952) – 2003, renewed in 2006 |
| ➤ Program Evaluator - ABET/Computer Science Accreditation Board       |   |
| ➤ ISO 9001 Certification (2002)                                       | ➤ ABET/Computer Science Program Accreditation (2003)  |
| ➤ Software Reliability Engineering (2002)                             | ➤ CA/Harvest Administrator (2002)   |
| ➤ CA/Harvest User (2002)  | ➤ Function Point Introduction (2001), Intermediate (2004)                                   |
| ➤ MATLAB, Advanced (2000)   | ➤ CS 642 Compiler Construction (1999)   |
| ➤ STS 5105 Contemporary Issues in Science & Technology Studies (1995) | ➤ STS 5206 Main Themes in the History of Science and Technology (1995)                      |
| ➤ SEPG Planning (1995)  | ➤ CADRE/Teamwork Users (1992)   |
| ➤ UNIX Systems Programming (1995);                                    | ➤   |

## HONORS AND AWARDS

US Air Force - Outstanding Service Award, 1981  
 NASA - Certificate of Appreciation Award, 1995  
 MCI - Annual Technical Leadership Award, 1999  
 MCI - US Patent Award (#6,427,002 B2) , 1999

## OTHER ACHIEVEMENTS AND ACTIVITIES

- In 1986, I co-founded a non-profit agency Children's FAS Educational Fund) for finding and treating children with untreated Fetal Alcohol Syndrome (FAS). Within this effort, I presented evidence on behalf of the Adoptive Families of America before the US House of Representatives: Ways and Means, Sub-Committee on Adoption Issues.
- While in the US Air Force (1974 - 1981) I received many commendations, most notably the Distinguished Service Award in 1980.
- I did 2 years research at the Software Productivity Consortium (1986-1987) as a representative of Harris Corporation, and was on a joint committee presenting to the US Air Force Systems Command at Hanscom AFB, MA in 1987.

- As a senior member of the American Institute for Avionics and Astronautics (AIAA), I gave a presentation on Space Station Freedom software architecture at the quarterly meeting in 1991 (San Diego).
- As the section head of software engineering, I gave the software architecture presentations on the NASA channel for the joint preliminary and detailed design reviews for Space Station Freedom in 1990 and 1992.
- I have attended many ACM and IEEE conferences since 1998, along with the annual SEPG conference sponsored by the Software Engineering Institute (SEI) under Carnegie Mellon University, since 1992.
- I was briefly a certified instructor of the Capability Maturity Model Integrated (CMMI) under the SEI in 2006.
- At MCI I received a joint US patent (#6,427,002 B2) and the Technical Leadership Award in 1998. At DHL and Coldwater Creek, I was invited to give lectures on software engineering ethics in 2004 and 2007.
- I have been a Certified Software Development Professional with the IEEE since 2003.
- I submitted papers to 2 IEEE conferences in 2003 and 2007 ("Culpable Software Engineering" and "Authenticity and Ethics in Software Engineering: Chaotic In-Equities")

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### ADDITIONAL ACTIVITIES AND INVOLVEMENT

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In 1986, I co-founded a non-profit agency Children's FAS Educational Fund) for finding and treating children with untreated Fetal Alcohol Syndrome (FAS). Within this effort, I presented evidence on behalf of the Adoptive Families of America before the US House of Representatives: Ways and Means, Sub-Committee on Adoption Issues.