CAREER PROGRESSION

- The Boeing Company (9/1990 to 12/2015)
- Senior Project Engineer, Systems Engineering from 6/2006 (seniority level 6 out of 6)
- Boeing Associate Technical Fellow in Developmental Methods from 1/2002
- Boeing PhantomWorks from 2010

MAJOR ACCOMPLISHMENTS

Commercial Transport Aircraft development (loan to Boeing Commercial, 1/2010 – 12/2015)

- Model-Based Design with Simulink for Fuels Analysis
    - Rigorous System Engineering via customized Simulink User Interfaces
    - Developed Requirement Trace-to-Measure practices
    - Coding of prototypes and supporting software
- Fuel Tank Inerting Models Development (767-2C/KC-46)
    - Response Surface Modeling Methodology Development
    - Ported legacy analysis to Matlab (VBA-to-m-code, VBA-to-Simulink)
    - Fuel Management Modeling (Simulink)
    - Software Controller Modeling (Simulink)
    - Excel/m-code/Simulink Co-simulations
- Independent auditing and assessment of 787 Fuel Tank Inerting Monte Carlo Analysis
    - Integrated aero-, thermo-performance and mixing models developed by others
    - Batch-mode Latin Hypercube executive approach running 10x faster
    - Re-coded analysis for clarity and speed of execution
    - Developed approach and SINDA template for revised Monte Carlo Simulation

SBInet (11/2008 – 1/2010)

- Alternate Chair, Engineering Review Board
- Developed spatio-temporal frequency analysis for probability of radar detection
    - Implemented radar regression model and integrated with LiDAR terrain data
    - 100x faster than prior Monte Carlo method, with better validation results
- Consulted to System Test group for statistical basis of formal acceptance testing
- Revised entire product structure, resulting in customer acceptance of the system
- Supervised program-wide selection of drawing types per ASME Y14.24

Future Combat System (FCS) (7/2004 – 11/2008)

- Synthesized the program's factorization of projectile and propulsive weapon systems
    - Based on US Army exterior ballistics models and combat doctrine
    - Used results to develop and negotiate detailed Lethality Requirements
    - 10x more stable than typical FCS technical requirements (% revisions/year)
- Conducted analytic and discrete sensitivity analyses of weapons performance

- Demonstrated influence of weapon features on overall Combat Performance
- Avoided costs for low-influence weapons and munitions

International Space Station Common Berthing Mechanism (CBM) (9/1991 – 5/2001)

- Led development of complex electro-mechanical tele-robotic devices & fixtures
  - Lead Systems Engineer, Lead Designer, Lead Test Director, IPT Leader
  - Up to 74 directly reporting Engineers and Test Operations personnel
- Supervised Contact Dynamics and Thermal analyses, including validation by test
- Integrated detailed test and analysis plans, interpreted the combined results
- Executed over 15,000 hardware/software test runs at all levels of system assembly
- Led factory assembly/installation of high-precision mechanisms & sealed interfaces
- Resolved dozens of major trouble-shoots & hundreds of lesser issues
  - Diagnostic techniques included:
    - Ishiwaka Diagramming
    - Analysis of Variance methods ("Design of Experiments")
    - Time-frequency analysis
    - Wavelet Analysis
  - Only one residual Unexplained Anomaly (probable single-event upset)
- Primary Mission Evaluation Room engineer at JSC for early flight operations (5A, 6A)

Non-Advocate Reviews (NAR) and Other Internal Consultation

- Chair, National NAR for the Sea-Based X-band Radar thermal control system
- Member of two NAR for Ares Upper Stage structures design and test projects
- BDS technical delegation, AC-130/Bushmaster Integration NAR
- BDS delegate to BCA System Engineering process cost reduction review

PRIOR EXPERIENCE

General Dynamics/Convair, GD/Space Systems, Martin Marietta/Denver Aerospace

Projects included Advance Launch System, Orbital Transfer Vehicles, Space Station Environmental Control, Small ICBM Ground Support Equipment, Space Station Power Systems, Atlas and Centaur launch vehicles, and various composite structures projects

COMPUTER PROFICIENCIES

Matlab - multiple Toolboxes, Simulink, inter-process DCOM (SINDA, Excel)
Relational Database Design
MS Visual Basic (VB6, VB for Applications, VB.net)
C

EDUCATION

MS Inter-Engineering, University of WA
Custom Curriculum: Astronautics, Computer Science, Business Administration
BS Aeronautics and Astronautics, University of WA