Rod Scholl

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Engineering Leader, Technical Mentor

Interpersonal Skills:	Customer management, Leadership/Mentoring/Motivation, Integrity
Business Acumen:	Profit-Focused Program Management, Budget & Schedule Fidelity
Creative Solutions:	Challenges Assumptions, Leverages Others, Assesses Emerging Technology
Execution:	Commits Carefully, Manages Scope, Delivers without Exception

Expert Finite Element Analysis: 20,000+ hrs with ANSYS

Fatigue (crack intiation/propagation, LCF, HCF), fast fracture, shock, random vibration, response spectrum, transient dynamic, modal superposition, impact/drop test, CFD, IcePak, thermal, radiation, secondary flow (engine cooling), probabilistic design (PDS), optimization, strain gauging, multi-physics, nonlinear contact, composites, welds, creep, hyperelasticity, viscoelasticity, viscoplasticity materials, parameterization, APDL, Classic and Workbench Environments, Ansys Customization Toolkit (ACT), Space Claim, Design Modeler, Mil-Std-810,

Professional Experience

Epsilon FEA		(2008 – Present)
Company Founder / President		Minneapolis, MN

Founded engineering services company, becoming Twin Cities community leader in FEA technology. Specialize in numerical analysis and solutions in challenging technical areas using ANSYS simulation/FEA/CFD. Build partnerships helping customers meet technical and resource challenges.

- Manage Epsilon FEA's internal costs, infrastructure investments, and project load to offer a cost-savings over customers' internal resources, and our competitors.
- Balance small business customer service/low overhead, with big business quality system, documentation, accounting, and IT profile to win contracts with Fortune 100 companies.
- Talented communicator and team builder to navigate spectrum of customer team dynamics.
- Project management from problem definition and quotation, through final analysis and report.
- Experienced in physics, materials, and environments in all phase gates of various industries: Automotive, Aerospace, Biomedical, Manufacturing, Semiconductor, Power Generation, etc.
- Continuously identify and communicate Process Improvements to customer methodology.
- Root Cause investigations of design failures.

- Continuous revenue and profit growth throughout global downtown in R&D and FEA.
- Created triannual technical seminars on advanced FEA topics fostering community relationships.
- Using new ACT customization, automated weld sizing calculation to meet AWS/AISC standard.
- Created Simulation Technology Roadmaps for two fortune 100 businesses. Included ROI calculations and recommendations after surveying business stakeholders, technologists, and users to assess technical challenges. Planned simulation software, hardware, training, and identified potential programs where utilizing numerical simulation with predicted large ROI.
- Identified simple math error in customer's material property estimate, rendering the multi-year field recall of industrial generators and ongoing investigation unnecessary.
- Changed customer's dynamic calculations (used spectrum rather than static equivalent), allowing the derailed program to continue with only minor design changes, and improved design system.
- Innovated profile change to gyroscopic MEMS capacitor sensor, mitigating decade-long effort to reduce effects of solder creep on sensor output.
- Creator and Writer of "The FEA Comic", a monthly humorous graphic publication for analysts.

Phoenix Analysis & Design Technologies (PADT) (1999 – 2008)
Specialist Engineer | Senior Engineer | Engineer Phoenix, AZ

PADT, an ANSYS reseller and support firm, provides simulation, rapid prototyping, and design services. With exposure to many industries, business models, and personalities, I developed insight regarding successful project dynamics and leadership practices. While managing projects with diverse technical, schedule, resource, and budgetary limitations, I gained state-of-the art knowledge in multiple engineering domains and developed my successful approach to rewarding customer relationships.

~ Mentored >100 FEA engineers one-on-one, learning their industry challenges, and providing guidance and solutions. Also provided phone technical support to hundreds of other analysts.
~ Delivered >50 training classes. Wrote materials including creation and promotion of "mini-courses" a key driver of revenues.

- Identified major design system flaw in Fortune 500 aerospace company. Thus twenty years of pump/system had been underestimating their customers' shock requirements by 10X!
- Led around the clock analysis team working in shifts across multiple sites to push through a redesign on and aerospace fuel pump three days before PDR.
- Creator and chief writer for "The Focus" an ANSYS technical publication with 3000+ readers

Allied Signal / Honeywell Engines (1997 – 1999)
Engineer II Phoenix, AZ

Analysis and design of jet engine turbine components. Focused on learning their best-in-class mechanical methods and tools, and how to manage risk/benefit of design-by-analysis in advanced tech.

~ Using closed form calculations, ANSYS FEA, and life prediction tools, I designed and redesigned existing hardware achieving increased life and cost savings on materials and manufacturability.

- Designed MPC cooled turbine using parametrics compressing the 3-month design cycle to 3 weeks. Was the only Honeywell analyst with skills to meet the aggressive schedule.
- Six Sigma Greenbelt project in predicting disk burst (was within 0.1% speed!)
- Reduced weight 20% with 2-step over-speed innovation on next-generation regional jet engine.

BFGoodrich Aircraft Evacuation Systems (1990 – 1997)
Project Engineer | Development Engineer | Intern Engineer Phoenix, AZ
Materials Lab Manager | Lead Technician | Technician | Production Assembler

Development and FAA certification of Aircraft Evacuation Slides. Worked full-time while attending college, starting on the production floor then promoted through many engineering roles.

~ Onsite engineering liaison to the customer (Boeing) in Redmond, WA. Included investigation of costly and customer-sensitive flight-line failures of current production units.
~ Managed evacuation slide design, development & qualification testing and team of technicians.
~ Extensive, documentation via DRN's, test plans, reports, schedules, and procedures
~ Setup and operation of Materials Research Lab. Designed, purchased, calibrated, maintained lab equipment. Scheduled/performed testing (destructive and non-destructive). Extensive data analysis (SQC, regression, ANOVA, DOE), and FAA regulated test-method development.

- Identified impact of slide surface location on beam strength - 1st major advance in a decade of evacuation slide beam strength (a driving design factor). Saved failing B737-300 program.
- Created advanced DOE method: dynamic variable definition reduced testing 65%.
- Updated FAA/TSO radiant heat test/equipment to reduce variability by factor of 50x.
- Corrected pressure / temperature relationship for temperature compensated pressure gauge allowing for mixed gas compressibility theory.
- Developed low-strain light installation reducing field failures by 80%.

Education   Arizona State University,   Tempe AZ   (GPA 3.6)

B.S.M.E in Engineering Mechanics Coursework included the Mechanical Engineering curriculum and upper division courses from Aero, Civil, Materials, and Electrical programs

- Second person in 20 years to successfully complete this difficult program.
- Worked full-time in engineering (40-60 hrs/week) concurrent with self-funded education.

Community Activities

- Created Twin Cities ANSYS user group, with triannual meetings of local FEA experts from the metro area for technical presentation and discussion. 20-30 attendees for specific subjects would attend from invitee list of several hundred.
- Created "Mentor Natio": a non-profit organization for one-on-one mentoring of members based on detailed, member-elected constitution. Culmination of many disciplines and several years' effort.
- Presented paper at ANSYS Midwest Conference: Weld Analysis using ANSYS Customization Toolkit (ACT). Also published in ANSYS Inc.'s "Advantage Magazine" – and gave interview for their online.

References available on request.