Mechanical and Safety Engineering LLC

John L. Ryan, BSME, Professional Engineer, Curriculum Vitae

Education

B.S. Mechanical Engineering, University of Arkansas, Fayetteville, Arkansas, 1994
Engineering Studies, Colorado School of Mines, Golden, Colorado, 1990-1992
Emergency Medical Technician, Northwest Arkansas Community College 1997
Studies in psychology, University of Arkansas, Fayetteville, Arkansas 2006
Master of Arts Clinical Mental Health Counseling, Adams State University, 2015

Engineering Work Experience

Owner, Mechanical and Safety Engineering LLC, 2010 -
Duties include safety analysis of products, certification of products, structural analysis of buildings, product development, accident investigation, accident reconstruction, product testing, hazard analysis, alternate designs, expert witness testimony

Forensic Engineer, Safety Engineering Resources, 2002-2009
Duties include accident investigation and reconstruction (determining initial accident cause, system or component failure cause), product safety testing (testing products adherence to ANSI, ASME, and other standards - includes determining testing requirement, setting up testing, running tests, analyzing test results, reporting test results), finite element analysis of products (developing 2D and 3D models of products, constraining and applying design loads, interpreting data, redesigning product, reanalyzing - determine cost-effective solution to over-stressed components), Autocad drawings, product development (development of product prototypes, redesign of existing products to meet new requirements), ergonomic design analysis (making sure products conform to ergonomic criteria for use), human factors research, patent searches, failure analysis (determining cause of component failure using hardness testing, stress analysis, destructive testing - determining failure cause and design solution), project management, bidding jobs, structural analysis of buildings and building components (finite element analysis of structures, hand calculations, code conformance), slab and foundation analysis, structural engineer report assistance (performing site visits for structural reports, checking code compliance of structure, assisting in final structural report), website design and maintenance, managing editor of publications, marketing

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Design Engineer, Ryan Engineering Inc., Siloam Springs, Arkansas, 1996-2001.
Duties included industrial manufacturing design, machine element design, finite element analysis, design and safety analysis of existing products, product safety testing, collections, patent research. Products designed: Numerous steel angle and steel channel building trusses (this involved determining loading conditions for each structure, developing 2D FEA model, applying loads, interpreting results, redesigning trussses, re-running FEA), bleacher stands, floor polisher handle (this involved producing an exact 3D replica of a complex handle, then applying loads, boundary conditions, material properties, running FEA, interpreting results, changing handle design), lifeboat foundation for shipping vessel, 5000 pound engine hoist, 55,000 pound hydraulic press, trailer back-up mirror, burnisher testing apparatus, warehouse floor plan, solar heater, torsional electrical control switch, mandrel stripper, safety interlock for rubber mold press, garlock dough sweeper, ladder fly-lock. Finite element analysis was performed on various products to determine if any structural design defects existed in the products. Three dimensional models as well as beam element models were used depending on the particular situation. Finite element analysis was used to optimize designs of new metal truss buildings.

Co-Owner and Operator, Wild World Paintball, Siloam Springs, Arkansas, 1988-2002
Duties included personnel management, directing operations, accounting, supply, construction, maintenance, cost reduction

Maintenance Director, Gilgit Eye Hospital, Gilgit Pakistan, 1995-1996
Duties included repairing and performing maintenance on medical and domestic equipment, completion of hospital building, building maintenance, and supervising the other maintenance personnel. Maintenance of facility was continued to keep machinery up and running, and any problems with hospital building were addressed and corrected. Duties also included teaching children part time.

Engineering Apprentice, Ryan Engineering, Inc., 1994-1995
Engineering Apprentice, Ryan Engineering, Inc., Duties included product testing, design analysis, CAD. Product testing involved testing various products for adequate strength, stability, and quality control. Products were tested according to nationally-established standards such as ANSI, as well as to in-house testing standards. Specific testing performed included ladder strength and stability testing, aluminum material testing, car seat strength testing, destructive testing to

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determine ultimate strength of samples from various products. Extensive testing was performed, often requiring innovative methods and testing devices.
Design analysis and redesign was performed on different products manufactured by Ryan Engineering's clients. These products were redesigned to make them cheaper to produce, stronger, and to better perform their intended use. This required in-depth creative design. Design projects were often performed in teams of two, requiring a high degree of accountability and responsibility from all.
CAD duties involved producing complete sets of drawings for redesigned products. CAD was also used to produce representations of tested products. Complex CAD drawings were produced, assembly and detail drawings.

Technician, Ryan Engineering, Inc., 1987-1994
Duties included factory automation, machine fabrication, machining, welding, assembly, maintenance. Factory automation duties included fabricating machine parts and assembling robotic machines. These machines ranged from moderately to highly complex. Machines included automated vehicle belt stuffing machine, tortilla handling prototype, automated bleacher drill machine, multiple PVC pipe handling machines. I was responsible for following design drawings to produce machinery, as well as develop and implement solutions to machine design problems that were encountered during fabrication. There was a high degree of responsibility for machine fabrication and assembly. Fabrication of parts for machines was also performed, using plasma cutter, chop saws, drill press, milling machine, hand tools, welding. Duties also included installation of factory automation machinery.

Books Written

Warnings Manual, Donegal Bay Publishing, 2007
Take This Job…, Donegal Bay Publishing, 2007
Forklift and Stacker Manual, Donegal Bay Publishing, co-author, 2006
Stepladder Manual, Donegal Bay Publishing, co-author, 2005
Machine Guarding Manual, Donegal Bay Publishing, co-author, 2007
Lawnmower Manual, Donegal Bay Publishing, co-author, 2006
Overhead Door Manual, Donegal Bay Publishing, co-author 2007
ATV Manual, Donegal Bay Publishing, co-author, 2007

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Articles Written

"Continuing Education for Engineers", ME Today, May 2010
"Engineering Ethics Basics – A Practical Guide to the Theory and Implementation of Engineers' Moral and Professional Obligations" 2008

Courses Written

Product Safety for Design Engineers, 2010
Strengths of Materials II, 2014
Hazard Analysis for Engineers, 2017

Courses/Certifications

September 2011 - Crash Data Technician 1 and 2
May 2012 - Crash Data Analyst
December 2012 - Accident Investigation I

Licensed Professional Engineer in: Arkansas, Oregon

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