

Joseph Galliera

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Objective To obtain a position as a design engineering manager overseeing an engineering group with a focus on analysis, specifically Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA).

Education Villanova University, Villanova, PA.
Master of Mechanical Engineering, May 1998.
Bachelor of Mechanical Engineering, May 1995.
Minor in Mathematics.

Computer Experience Proficient in COSMOS, FloWorks, EFD.Lab, SolidWorks, ANSYS, Fluent, MathCad, MS Office.
Operating Systems used: Windows, UNIX, AIX, Mac.

Work Experience

8/02-Date **SolidWorks Corp.**, Concord, MA. Territory Technical Manager, East Area North America.
Territory Technical Manager for the SolidWorks Simulation product line sales team in the East area of North America, including Mid-Atlantic, New England and eastern Canada. Primary duties include sales demos and presentations of the COSMOSWorks and FloWorks products, technical issues with the software, managing resellers' engineers, interviewing prospective engineers for resellers, managing the allocation of funds for hardware, software and office needs, training on software, creating quotations and completion of consulting work. Work is facilitated by travel, phone calls, email, FTP and web meetings.

3/00-8/02 **Pall Aerospace Corp.**, New Port Richey, FL. Senior Analysis Engineer.
Perform linear and non-linear analyses using ANSYS to predict and improve the fatigue life of hydraulic manifolds and valves that Pall manufactures for various commercial and military aircraft applications. Translate to ANSYS complex three-dimensional solid models created from CATIA using CADfix translation software. Produce finite element models from the solid model translations ranging in size up to two million degrees-of-freedom with non-linear material properties. Determine the best-suited auto-fretage pressure, objectively to reduce the maximum fatigue stresses, by testing a series of high pressures on the model that introduce beneficial residual stresses into the model and then run subsequent analyses on the same model to predict the stresses at operating pressure.
Perform CFD analyses of a Coalescer/HEPA filter and Pressure Swing Adsorber system in the Army's Comanche Helicopter (RAH-66) program. Using translated CATIA solid models in Gambit, Fluent's pre-processor, create axisymmetric and three-dimensional finite volume meshes, set turbulence and compressible flow conditions, and apply pressure and mass flow boundary conditions to the model. Used Fluent to analyze the models and identify detrimental pressure losses in the system and implemented design changes to the model to improve the overall system performance.

11/99-3/00 **Environmental Tectonics Corp.**, Southampton, PA. Analytical Engineer.
ETC is an international company on the leading edge of design and manufacturing of simulated environments that include aircrew training systems, centrifuges, pressure chambers and entertainment systems. In support of the manufacturing of ETC products, my role was to perform static and dynamic analyses of linear and non-linear systems using available software such as ANSYS and Working Model, and make calculated engineering decisions on whether the systems meet appropriate safety codes.

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- 8/98-8/99 **NASA Langley Research Center**, Hampton, VA. GWU/JIAFS GRSA.
Assigned to the Computational Modeling and Simulation Branch at NASA as a Graduate Research Scholar Assistant (GRSA) under the supervision of GWU in their JIAFS program. Became involved as part of research project in algorithm development, specifically multi-grid methods to achieve optimal convergence rates for the three-dimensional compressible Navier-Stokes equation.
- 9/96-5/98 **Villanova University, Dept. of Mechanical Engineering**, Villanova, PA. Graduate Assistant.
Thesis: Flow in a Coupled Manifold: Computational Analysis vs. an Integral Model
Performed a study of an isothermal flow distribution in coupled manifold systems using a dual approach. First, using a commercial CFD code, Fluent, to simulate local velocity and pressure distributions in the system, and secondly, modifying an integral (spatially averaged) model for mean flow and pressure distributions. Objectively this was done to compare the results of the two models to obtain more accurate static pressure regain coefficients employed in the integral model. Active element in the mechanical engineering labs teaching sophomore, junior, and senior engineering students in experiments such as hardness, torsion, flow over bluff bodies in a wind tunnel, steady-state heat transfer in a conducting-convecting fin, centrifugal water pump, and lift and drag coefficients of an airfoil.
- 5/97-8/98 **Materials Research & Design, Inc.**, Wayne, PA. Mechanical Engineer.
MR&D is a composite materials design company specializing in components for aeronautic and aerospace technology. Duties as an engineer involved design analysis by computing mechanical and thermal properties of isotropic, anisotropic, and multi-dimensional composite laminates and making use of this data to perform a finite element analysis of the composite design using ANSYS. Performed conjugate heat transfer analysis using Flotran on such projects as cooling the Linear Aerospike Rocket Nozzle for the Lockheed Martin Reusable Launch Vehicle (RLV).
- Honors Awarded** Certified SolidWorks Professional (CSWP).
COSMOS Advanced Certified and FloWorks / EFD.Lab expert.
Sigma Xi international scientific research society member.
Tau Beta Pi national engineering honor society member.
Pi Tau Sigma national mechanical engineering honor society member.
Graduate Research Scholar Assistantship, The George Washington University (GWU), Joint Institute for the Advancement of Flight Sciences (JIAFS).
Graduate Research and Teaching Assistantship, Villanova University.
Cum Laude, Villanova University.
Dean's Award for Academic Excellence, 1995.
Dean's List every semester.
Magna Cum Laude, Bishop Eustace Prep School.
- Course Work** Fluid Mechanics, Computational Fluid Dynamics, Compressible Flow, Rheology, Heat Transfer, Convection Heat Transfer, Advanced Partial Differential Equations, Ordinary Differential Equations, Numerical Analysis, Finite Element Mechanics, Mechanical Engineering Design, Material Mechanics, Structural Mechanics, Analytical Dynamics
- Publications** G. F. Jones & J. M. Galliera, "Use of Fluent/UNS to Predict Isothermal Flow Distribution in Coupled Manifolds," *Proc. Fluent Users-Group Meeting*, Lebanon, NH, 1998.
G. F. Jones & J. M. Galliera, "Isothermal Flow Distribution in Coupled Manifolds: Comparison of Results from CFD and an Integral Model," *Proc. ASME Int. Cong. Exhib.*, Anaheim, CA, 1998.
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