

TARUN K GHOSH

US Citizen

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OBJECTIVE

Provide engineering services and innovative solutions to the aerospace industry as it relates to design, analysis, testing and certification of structural components.

EDUCATION

Ph.D., Civil Engineering, **University of Southern California**, Los Angeles, CA, 8/95

MS, Mechanical Engineering, **University of Tulsa**, Tulsa, OK, 8/81

BS, Mechanical Engineering, **Indian Institute of Technology**, India, 7/79

SPECIAL SKILLS

- stress, dynamics, thermal loads analysis of **metallic** and **composite** structures
- finite element modeling and analysis using **NASTRAN, ANSYS, PROE/MECHANICA**
- pre and post-processing codes **PATRAN, FEMAP, SDRC/IDEAS**
- buckling, gap/contact, preload, tolerance and thermal analysis
- modal, static, random vibration and functional **testing** of components
- modal synthesis, coupled loads and super-element analysis
- **FORTRAN, C, MATLAB** and **Visual Basic** programming
- Spreadsheet based fatigue and NASGRO based damage tolerance analysis
- Able to work with **CATIA, PROE** and **Solidworks**

EXPERIENCE

1/05 – Present: The Continuum Engineering, Los Angeles, CA

As senior structural analyst provide technical support to projects and customers:

- (1) CoNNeCT/Space Station Program for NASA-Glen Research Center, Cleveland/OH: Performing stress and dynamic analyses, supporting modal testing, developing methodologies, supporting certification for launch and on-orbit environments. Other tasks involve trouble shooting, problem solving, and liaison with vendors and prime.
- (2) Virago Program for Raytheon, El Segundo/CA: Performing analysis and testing of rack mounted electronic packages in aircraft. The task involved building PATRAN based NASTRAN models and performing transient, random, shock and sinusoidal analysis in support of design and testing.
- (3) CheMin/Mars Rover Program for Swales (ATK), Pasadena/CA: Developed MSC/NASTRAN model of the Mars Rover mounted CheMin using FEMAP. Performed strength assessment of the components under launch, Mars landing and operational loads. Performed structural analysis in support of the construction management to simulate the landing of the Mars Rover on Mars surface. The structure was checked to meet civil/structural code requirements.

- (4) AirBus A400M Program for Barry Controls Aerospace, Burbank/CA: Perform stress, dynamic, thermal, fatigue and damage tolerance analyses of engine vibration isolation system using MSC/NASTRAN, MSC/PATRAN, PROE/MECHANICA, NASGRO and MATHCAD. Developed fatigue analysis code for Airbus A400M EVIS component life estimation per customer specification.
- (5) Vibration Testing Equipment for Wyle Laboratories, Huntsville/AL: Perform dynamic analysis in the qualification of test equipment and fixture. The task involves developing mathematical models and performing NASTRAN modal analysis.
- (6) Development and Other Work: Develops Visual Basic codes to work with MicroSoft-Excel for the rapid qualification of joints and members under multiple load cases. Sets up methodologies for structural analysis. Provides training to engineers working for customers in performing analysis to industry standard. Work on proposals to government and private industry.

6/04 – 12/04: Barry Controls Aerospace, Burbank, CA (Consultant)

As Senior Structural Analyst performed stress analysis of engine mounts. The task involved interfacing with design, testing, project management and customers.

2/04 – 6/04: Alliance Spacesystems Inc., Pasadena, CA (Consultant)

As **Senior Engineer** was responsible for developing MSC/NASTRAN model of support structure for the Beam Splitter Chamber (BSC) for the NSF funded project for the detection of gravitational waves using FEMAP. Performed stress and dynamic analyses.

7/03 – 1/04: Space Exploration Technologies, El Segundo, CA (Consultant)

As **Structural Engineer** was responsible for the design, analysis and optimization of critical space vehicle components. Performed MSC/NASTRAN based coupled loads analysis for payload integration using FEMAP and PATRAN. Performed stress analysis of components.

7/02 – 1/03: Space Vector Corporation, Chatsworth, CA

As **Senior Engineer** was responsible for performing trajectory, stability and thermal analysis of missiles. Was also responsible for evaluating the structural integrity of rocket hardware and supporting manufacturing and testing of hardware.

3/00 – 5/02: Vertel Corporation, Woodland Hills, CA

As **Senior Software Engineer** provided technical support and training of telecommunication software, performed testing of software and prepared technical documentation. Also coordinated with customers, software developers and vendors in resolution of problems.

2/88 – 3/00: Rocketdyne, Division of Boeing, Canoga Park, CA

As **Structural Engineer** performing **stress, dynamics and finite element analysis**

- worked on Space Shuttle Main Engine and Space Station projects
- generated finite element models using **NASTRAN, ANSYS and STARDYNE**
- conducted **linear analysis** under static, random, transient and thermal loads

- performed **non linear modeling and analysis** of solar array
- skilled in **superelement** and **modal synthesis** analyses in **NASTRAN**
- developed **methodologies and software** for improved methods of analyses
- leadership role in **static and modal testing** of hardware

8/81 - 2/88: Miscellaneous Companies

As **Mechanical Engineer** was responsible for

- developing STARDYNE and ANSYS models of components for utilities
- perform static, dynamic, seismic and thermal analyses per ASME and AISC codes.
- design, analysis, fabrication and testing of high-pressure systems
- developing electrical and control system for automatic operation of pressure system.

PARTIAL LIST OF PUBLICATIONS

"MSC/NASTRAN Based Component Mode Synthesis Analysis Without the Use of DMAPs", 1996 MSC World User's Conference, Newport Beach, California, June 6 - 9, 1996.

"Improved Method of Generating Control System Model Using Modal Synthesis", 38th SDM Conference, April 7 - 10, 1997, Kissimmee, Florida.

"Improved Method of Modal Synthesis in the Analysis of International Space-station Structures", AIAA Modeling and Simulation Technologies Conference, August 11 - 13, 1997, New Orleans, Louisiana.

"Model Validation and Testing of International Space Station Structures Using MSC/NASTRAN", MSC Aerospace Conference, Long Beach, California, June, 1999.