1825 K Street NW
Washington, DC, 20006
Phone 202-646-2500

Job Opening (RD003): Research Engineer – Nonlinear Finite Element Developer/Analyst

TITLE: Research Engineer
WAI Business Unit: Applied Science and Investigations

LOCATION: Washington, DC, 20006

RESPONSIBILITIES & JOB DESCRIPTION:

A successful candidate should have a strong command of computational structural mechanics and proficiency in the development and use of advanced FEA methods and software, both commercial and/or proprietary software. A candidate should demonstrate background and command in several of the following key areas of interest:

- Analysis of various types of structures subjected to extreme loads, including air blast, underwater explosions, impact, fatigue and fire effects
- Analysis of vibrations of coupled fluid-solid systems for modal, acoustic, sound radiation, and durability.
- Mechanics of large deformation and failure of ductile, brittle, composite and hybrid materials
- Participation in development of constitutive models for numerical simulation of nonlinear material and structural behavior, including failure.
- Pre and post-processing automation algorithms, and development of modules interacting through Standard Application Interface (API) programming.
- Strong background in structural mechanics and proficiency in finite element analysis, both in terms of development and advanced usage of commercial and/or lab software

Additional qualifications include:

- Working knowledge of damage tolerance and fail-safe principles for aircraft components, both metal and composite.
- Basic understanding of fatigue testing and load spectra.
- Command of computational structural acoustics

Differentiating qualifications include recent conclusion of academic study, demonstrated development of FEA code, and publications.

Any new hire will be involved heavily in finite element modeling of severe or unusual mechanical phenomena, such as blast, shock, fire, fatigue and structural-acoustics in moderate to large structures. This modeling will include development of large models using interactive CAE tools, performing the analyses, and interpreting and analyzing the results. Finite element software to be used may include both in-house and commercially available tools such as Flex, Dyna, HyperWorks, Ansys, and Abaqus; we do not necessarily expect expertise in specific tools.

REQUIREMENTS

Recent PhD in structural engineering, applied mechanics, mechanical engineering, computational sciences, or related field. Strong interpersonal skills and willingness to work in an aggressive, success-oriented team environment are advantageous.

SPECIAL INSTRUCTIONS

Position requires US citizenship and eligibility for a government issued security clearance. Clearly indicate in your response your citizenship status.

SUBMISSION

Please submit a cover letter, resume and references by email to **careers2013@wai.com** and reference in the subject line "**Job RD003**".

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