



Senior Engineer / Scientist – Developing Multiphysics Modeling and Simulation Tools

About Karagozian and Case, Inc. (K&C)

K&C is an internationally recognized science and engineering consulting firm founded in 1945 with a focus on creating custom engineered solutions for extreme environments. K&C's mission is to engineer specialized solutions and products for the defense, space, energy, security, construction, and manufacturing industries. K&C's rapidly growing practice areas include: 1) applied research and testing, 2) modeling, simulation, and analysis, 3) product and software development, 4) protective design engineering, and 5) threat vulnerability assessments.

Career Opportunity

K&C is seeking an experienced senior engineer / scientist for its modeling and simulation group. The ideal candidate has an advanced degree in a relevant field and has since demonstrated achievements in developing multi-physics modeling and simulation tools for solid and fluid mechanics, has a strong background in numerical methods, is an experienced developer and user of high-performance computational codes, and is interested in developing simulation codes for a wide range of multi-physics problems. The selected candidate will join a dynamic team of talented engineers, physicists, computer scientists, and experimentalists to solve challenging problems involving extreme environments, including blast, impact, shock, and fluid-structure interaction.

Job Duties

- Develop and implement numerical methods for coupled fluid-solid problems that involve high speed flows, high deformation solid mechanics, impact, shock, fracture and fragmentation, heat transfer, and combustion.
- Deploy these methods in simulation codes to support projects that range in duration from a week to multiple years, depending on their scope.
- Report results in documents, reports, and briefings.
- Present results of computations to customers, at conferences, and at in-house seminars.
- Prepare technical input for proposals related to novel numerical methods and algorithms.
- Mentor and advise peers.

Candidate Requirements

- Ph.D., or a minimum M.S. with 5+ years in R&D, in a directly relevant Engineering or Physical Science discipline. Coursework in continuum mechanics (fluid and solid), the finite element method, and finite-volume method for CFD. A minor, or at least coursework, in applied math, physics and astrophysics, or computer science is preferred.
- Experience modeling fracture and fragmentation, and combustion a plus.
- Demonstrated programming skills in Fortran 90 and/or C++ is required.
- Experience in both Linux and Windows operating systems and high-performance computing infrastructure.
- Knowledge of finite element as well as fully compressible CFD methods including meshfree approaches.
- Publications demonstrating development and use of novel computational methods for materials and structures.
- U.S. Citizenship is required.
- Ability to attain security clearance.

Interested candidates should send a resume and cover letter to careers@kcse.com.

Karagozian & Case, Inc.

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