

**PhD student position in Computational Structural Mechanics in Department of Civil Engineering, The Catholic University of America, Washington, DC
(available from Fall 2014).**

PhD Research Topics: numerical modeling in one or more of the following areas:

- Dynamic soil-structure-interaction (SSI) analysis,
- Inverse scattering problems for non-destructive evaluation (NDE) of structures,
- Optimization of wave sources for elastic wave-based enhanced oil recovery (EOR),
- Inverse problems for the seismic imaging of porous permeable subsurface space, such as a hydrocarbon reservoir as well as the space utilized for CO₂ geologic sequestration.

Tasks:

- Literature review,
- Numerical modeling,
- Programming for high-performance computing,
- Publishing journal articles,
- Presenting at conferences.

Qualification: The following backgrounds are required (the research supervisor (Dr. Jeong) would also help the candidate to build such backgrounds).

- Strong background and interest in one or more of the following programming skills:
 - a. High-performance computing in a Unix or Linux cluster,
 - b. MPI (PETSC, etc.) or GPU (CUDA, etc.) programming,
 - c. MATLAB, FORTRAN, C++, or Python, etc.
- Strong background and interest in
 - d. Finite Element Method,
 - e. Wave Propagation Analysis / Structural Dynamics,
 - f. Structural Mechanics,
 - g. Optimization / Inverse Modeling.

Apply via <http://admissions.cua.edu/graduate/index.html> (GRE, TOEFL, SOP, and CV required).

For more information, contact: Jeong@cua.edu

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