

# Postdoctoral Research Position

## Multivariate Feature Detection & Visualization in Advanced Manufacturing

The Center for Applied Scientific Computing (CASC) at the Lawrence Livermore National Laboratory (LLNL) seeks a postdoctoral researcher to contribute to the analysis and visualization of multivariate volumes. Recent progress in material science and advanced manufacturing has enabled us to build previously unfeasible objects ranging from nanomaterials and printed metals to internal density gradients and intricate truss structures—all of which can influence new carbon capture technology, more efficient solar cells, or new medical devices. However, these objects defy traditional certification because internal structures, especially at micro- or nanoscales, are not accessible to physical probes or external observations. Instead, nondestructive techniques, such as x-ray, neutron, or acoustic imaging, are used to create high-resolution scans. This position will develop new techniques to jointly register, analyze, and visualize the different modalities, providing domain experts with reliable, intuitive approaches to relate spatial features to material performance and to certify that manufactured parts have been built to specification.



**CASC**  
Center for Applied  
Scientific Computing



[jobs.llnl.gov](https://jobs.llnl.gov)  
Job ID 105237



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Research directions of interest include but are not limited to:

- Multivariate visualization of large-scale volumes
- Multivariate feature detection and characterization
- Topological techniques
- Uncertainty quantification and visualization
- Machine learning methods
- Virtual reality interfaces

Candidates will be encouraged to conduct relevant exploratory research and publish results. They will work on an interdisciplinary team of scientists including domain scientists, imaging experts, and the visualization and analysis team.

 **Lawrence Livermore  
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