



## Network Informatics, Discrete Math, and Computer Science R&D Job Announcement

### Job description:

Sandia National Laboratories seeks new researchers for long-term positions in the area of mathematics and computer science for understanding complex networks. Large-scale graphs might arise from the analysis of complex social and engineered networks, such as might be derived from human interactions or internet traffic. Data may be large-scale and complex and may require massively parallel computing platforms. Of particular interest are experts in computational topology, graph-feature identification (e.g. isomorphism), community detection, statistics, machine learning, and text analysis. A research challenge is to account for uncertainty in large-scale graphs.

The successful applicants will be expected to conduct world-class research resulting in peer-reviewed publications and to collaborate with others to advance the broad program described in "Department description." This includes taking an interest in informatics-based applications, interacting with consumers of information, and developing application-specific software solutions.

### Department description:

The Computer Science and Informatics Department at Sandia National Laboratories conducts research and development in computer science, mathematics, and statistics. Specific research areas include graph algorithms, matrix and tensor methods, machine learning, information retrieval, data mining, and text analysis. The department supports national security missions, including cyber security and nonproliferation, and engages the broader scientific community. Software applications span data ingestion, aggregation, analysis and presentation of results. To this end Sandia maintains active programs in interactive large-scale information visualization, and massively-parallel hardware platforms (thousands of processors). Recent research projects involve analytical approaches for discovering relationships and predicting responses in large-scale data represented as graphs. Computability and algorithm scalability are critical and permeate all fields of study. See <http://www.cs.sandia.gov/hpc-informatics/index.htm>.

### Required/desired criteria:

An advanced degree (PhD or equivalent) in computer science, mathematics, statistics, or a related area is required for this position, as is a strong record of academic performance (3.5 GPA or higher). The candidate must provide evidence of relevant research expertise in the form of technical publications, presentations, software, and/or knowledge of applications. The successful applicant(s) must be able to work in a collaborative research environment and be willing to work in national security application domains. The ability to obtain and maintain a U.S. security clearance is required. Dual citizens may be asked by the U.S. DOE to renounce foreign citizenship. Other required qualifications include software development competence in C++, Java, MATLAB, R, or a related language; proficiency in solving problems, prioritizing work, and making decisions; and excellent written- and oral-communication skills.

Expertise in one or more of the following areas is desired for this position: graph analysis, linear algebra, machine learning, statistics, numerical analysis, scientific computing, optimization, computational combinatorics, data mining, information theory, computational linguistics, decision theory, and data fusion. Other desired qualifications include a background in solving practical problems in science and engineering; encounters with real-world data; and proficiency in software engineering, especially an understanding of object-oriented programming techniques and best practices, high-performance computing experience, and/or SQL database knowledge.

Submissions: Apply online at <http://www.sandia.gov/careers>. Click on Job Search and then the Search for Openings button. Type in Job ID 64380 in the keywords box to find this posting. Register and apply online. Please include a letter of interest and CV. For questions or information, please contact Brett Bader ([bwbader@sandia.gov](mailto:bwbader@sandia.gov)). Submissions before April 3, 2010 will receive full consideration. Sandia National Laboratories is an Equal Opportunity Employer M/F/D/V.