

ORNL Publications

External Publication

Job Posting Title

Postdoctoral Research Associate in Graph Theory and Applications NB50394506

Posted Date

10/02/2013

End Posting Date

01/02/2014

Purpose

The Complex Systems Group of the Computer Science & Mathematics Division at ORNL has an opening for a Post-Doctoral Research Associate in the field of Applied Graph Theory & Algorithms to work in two important areas of ongoing research: multi-scale graph analysis and approximate pattern matching in heterogenous graphs.

Data sources for many real-world applications pose numerous challenges to understanding the complex and possibly hidden relationships between components of a complex network. Furthermore, these networks often consist of heterogeneous entities and types of relationships, and many existing algorithms for computing network features and similarity are not directly applicable. ORNL is working to develop new methods for understanding both local and large-scale structures of these networks, modeling ongoing relationship dynamics, and identifying unknown patterns using approximate search algorithms. New developments in these areas have potential applications to fraud detection, situation awareness, and data visualization.

Major Duties/Responsibilities

ORNL is looking for a researcher with strong foundational knowledge of graph theory and successful experience developing graph algorithms and applying them to large data sets. This position requires innovative thinking about the nature of multi-scale decomposition and analysis of (potentially heterogeneous) graphs, both from theoretical and practical perspectives. Success will require new approaches to multi-scale massive network visualization, user interaction methods, integration of information visualization design with computational analytics, and evaluation methods.

Qualifications Required

Minimum Qualifications:

- A Doctoral Degree in Mathematics, Computer Science, or a related field received before starting the appointment, but not more than five years prior to the date of application;

- A proven record of research accomplishments pertaining to graph analytics, including theory, algorithm development/implementation, and applications;

- Excellent communication skills for conveying technical material in both written and oral presentations; and

- Self-disciplined work ethic, including the ability to balance two projects, collaborate with diverse teams, and an eagerness to tackle challenging research problems.

- Candidates must have a proven publication track record.

Additional Information:

Applicants cannot have received the most recent degree more than five years prior to the date of application and must complete all degree requirements before starting their appointment. This position is a temporary, full-time assignment not to

exceed 24 months. Certain exceptions may be considered.

This position will remain open for a minimum of 5 days after which it will close when a qualified candidate is identified and/or hired.

We accept Word(.doc, .docx), Excel(.xls, .xlsx), PowerPoint(.ppt, .pptx), Adobe(.pdf), Rich Text Format(.rtf), HTML(.htm, .html) and text files(.txt) up to 2MB in size. Resumes from third party vendors will not be accepted; these resumes will be deleted and the candidates submitted will not be considered for employment.

If you have trouble applying for a position, please email ORNLRecruiting@ornl.gov.

ORNL is an E-Verify Employer.

UT--Battelle is recognized by our employees and the community as an inclusive environment where diversity is valued and individuals and teams are inspired to contribute fully to the organization's success. ORNL is an equal opportunity employer.