

Position Number: D93309
Job Title: Post-Doc Research Associate
Department: Computer Science
FTE: 1.0 benefits eligible
Job Type: Fixed Term
Posted Date: 1/12/12

Position Summary

Applications are invited for a post-doctoral researcher at Portland State University in the area of formal verification and its applications to network and systems software.

The hosting project, SOUND (Safety on Untrusted Network Devices), is a new joint effort with researchers at the University of Pennsylvania (UPenn) and BAE Systems, funded as part of the DARPA MRC (Mission-Oriented Resilient Clouds) program. SOUND is also closely integrated with the existing SAFE (Semantically Aware Foundation Environment) project, hosted at University of Pennsylvania, Harvard, Northeastern, and BAE.

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This post-doc position offers an opportunity to put formal methods to work to attack critical problems in the security of our cyber infrastructure, in collaboration with leading researchers in secure systems and languages, and within a highly visible program. At Portland State, we will apply formal verification at multiple levels---specification, algorithms and protocols, and implementation---to increase assurance of both SAFE and SOUND. Our initial efforts will build on our experience producing verified implementations of runtime-system components using the Coq proof assistant in the context of the HASP/HARTS project.

For background information, refer to the following:

- On SOUND: http://www.cs.pdx.edu/~apt/MRCprop_technical.pdf
- On SAFE: <http://www.crash-safe.org/papers>
- On HASP/HARTS: <http://web.cecs.pdx.edu/~apt/icfp10.pdf>

Responsibilities

Fundamental job duties of the position include:

- Performing research
- Creating software artifacts
- Assisting in the development of contract deliverables
- Participating in activities of the research group, including research retreats and project meetings
- Presenting research results at conferences & at meetings with research sponsors
- Writing scholarly articles
- Assisting in the mentoring of students engaged in the research

- Execute minor administrative tasks necessary for project success

Minimum Qualifications

- Candidates must have (or be near to completing) a PhD or equivalent in computer science or other relevant area.
- Excellent written and oral communication skills.

Preferred Qualifications

Candidates are sought with interest and expertise in one or more of the following areas:

- Expertise in formal verification (for example, using Coq, Isabelle, or similar tools) is extremely desirable.
- Expertise in security, networking, or systems software is also highly desirable.
- Expertise in other formal methods (model checking, symbolic evaluation) is a plus.

Compensation

The starting salary rate for this position will be \$60,000 per year with an excellent benefits package including healthcare; a generous retirement and vacation package; and reduced tuition rates for employee, spouse or dependent at any of the Oregon University System schools. Candidates who have not completed their degree will be given a lower salary until their PhD (or equivalent) is awarded. This position initially runs through September 2012 with the possibility of renewal for up to three years total duration.

To Apply

To apply, please send a CV together with a brief description of your research accomplishments and interests, including the names of three references. Submissions should be sent to sound-adm@cs.pdx.edu. Please include the phrase "SOUND Postdoc", in the subject line. Questions about the positions may be directed to apt@cs.pdx.edu. Further information about Portland State's Department of Computer Science and its programs is available on the department, home page (<http://www.cs.pdx.edu>).

Review of applications will begin immediately. This position will remain open until finalists are identified.