Software repositories such as source control systems, archived communications between project personnel, and defect tracking systems are used to help manage the progress of software projects. Software practitioners and researchers are recognizing the benefits of mining this information to support the maintenance of software systems, improve software design/reuse, and empirically validate novel ideas and techniques. Research is now proceeding to uncover the ways in which mining these repositories can help to understand software development, to support predictions about software development, and to exploit this knowledge concretely in planning future development.

The goal of this two-day working conference is to strengthen the community of researchers and practitioners who are working to recover and use the data stored in software repositories to further understanding of software development practices. We expect the presentations and discussions at MSR 2008 in Leipzig to continue on a number of general themes and challenges from the previous editions held at ICSE 07 in Minneapolis, ICSE 06 in Shanghai, ICSE 05 in St. Louis, and ICSE 04 in Edinburgh.

We solicit position papers (4 pages) and research papers (10 pages). Position papers should discuss controversial issues in the field, or describe interesting or thoughtprovoking ideas that are not yet fully developed, while full papers are expected to describe new research results, and have a higher degree of technical rigor than short papers. The papers must be in ICSE format. Best papers will be invited for publication in an international journal.

Papers may address issues along the general themes, including but not limited to the following:

- Approaches, applications, and tools for software repository mining
- Quality aspects and guidelines to ensure quality results in mining
- Meta-models, exchange formats, and infrastructure tools to facilitate the sharing of extracted data and to encourage reuse and repeatability
- Models for social and development processes that occur in large software projects
- Search techniques to assist developers in finding suitable components for reuse
- Techniques to model reliability and defect occurrences
- Analysis of change patterns to assist in future development
- Case studies on extracting data from repositories of large long lived projects
- Visualization techniques and models of mined data
- Methods of integrating mined data from various historical sources

**MSR Challenge.** We invite researchers to demonstrate the usefulness of their mining tools on the CVS and Bugzilla data of Eclipse by participating in the two MSR Challenge tracks:

1. **Open.** Discover interesting facts about the history of Eclipse. Results should be reported as 4-page submissions, to be included in the proceedings as challenge papers.

2. **Prediction.** We will provide the number of bugs that occurred in selected Eclipse packages between 2003 and 2006. We challenge you to predict the number of bugs that will occur in those packages from Feb 10 2008 - May 10 2008. You can provide 1-page long descriptions of the rationale behind your prediction. Wild guesses are also welcome and will put the “real” miners under pressure.

The winners of both tracks will receive an award. See the MSR homepage for more information about requirements & rules.