

DEBARSHI CHATTERJI

PERSONAL INFORMATION

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Lines of codes give nothing away, I possess the skill to quantify software. After all "software is data too" ¹

AREA OF EXPERTISE

Empirical Software Engineering Human Factors in Software Engineering, Ethnographic Studies, Behavioral Aspects of Software Engineering, Software Inspections, Code Clone Analysis, Software Analytics, Survey Design, Usability Metrics, Mining software repositories.

TECHNICAL SKILLS

ESE Skills Naturalistic observational research, Qualitative research interview, Retrospective 'post-hoc' code analysis, Data Analysis (Qualitative & Quantitative), Survey design and analysis, Systematic literature reviews.

Language JAVA, C++, PHP, HTML, L^AT_EX

Database MySQL, SQL Server, Microsoft Access

Statistical Tools SPSS, R

Data Mining Tools Rapid Miner, CVSAAnaly

Code Clone Tools IClones, CCFinder, CCFinderX, CSeR

Other Tools & Frameworks SVN, CVS, Eclipse, JUnit, Visual Paradigm for UML

EDUCATION

2009-Present The University of Alabama, Tuscaloosa, USA
Doctor of Philosophy Department of Computer Science · Software Engineering Research Group
Thesis (Proposed): *Empirical Investigation of Causes and Effects of Code Clones*
Description: This thesis will empirically validate claims about developer behavior and propose solutions in the area of code clone management and cloning intent.
Advisor: Dr. Jeffrey C. CARVER, Co-Advisor: Dr. Nicholas A. KRAFT

2003-2007 Bundelkhand University, Jhansi, India
Bachelor of Technology Department of Computer Engineering

¹ Marcus A. and Menzies T. 2010. 'Software is data too.' In Proc. FoSER '10. ACM, New York, NY, USA, 229-232.

PROFESSIONAL EXPERIENCE

- Teaching* 2013–Present Teaching Assistant – CS315: Software Engineering (UA, Tuscaloosa)
Introduction to software engineering: the software crisis, program life-cycle, software systems analysis techniques, software modeling, theory and practice of design, program testing methodologies, programmer team organization, and program verification and synthesis.
- Research* 2009–2013 Research Assistant – Department of Computer Science (UA, Tuscaloosa)
NSF 0915559 & NSF 0915403 · Improving Code Clone Categorization
The goal of this collaborative project is to develop an automated and rigorous analysis process for identifying and codifying the relationships among clones using their structural and semantic properties. To maximize the impact of the techniques and tools on the effectiveness and efficiency of performing maintenance tasks when clones are present, the investigators will perform a domain analysis. After initial development, the team will validate and refine the techniques and tools. The research will help developers to maintain software, reducing total software cost and improving overall software quality.
- Employment* 2008–2009 Network Executive – PATNI Computer Systems Limited (Noida, India)
Network maintenance for VF Corporation, USA.

PUBLICATIONS

- Conference & Workshop Publications* Chatterji, D., Carver, J.C., Kraft, N.A., and Harder, J. "Effects of Cloned Code on Debugging: A Replicated Developer Study." Accepted to the 2013 Working Conference on Reverse Engineering. Koblenz, Germany. [IEEE](#)
- Bosu, A., Corley, C., Heaton, D., Chatterji, D. Carver, J., Kraft, N. "Building Reputation in StackOverflow: An Empirical Investigation." Proceedings of the 2013 Conference on Mining Software Repositories. San Francisco, CA. May 18-19. p. 89-92. [IEEE](#) [ACM](#) [DL](#)
- Chatterji, D.; Carver, J.C.; Kraft, N.A., "Cloning: The need to understand developer intent," Software Clones (IWSC), 2013 7th International Workshop on , vol., no., pp.14,15, 19-19 May 2013. [IEEE](#)
- Chatterji, D., Carver, J. and Kraft, N. "Claims and Beliefs about Code Clones: Do We Agree as a Community? A Survey." Proceedings of the 6th International Workshop on Software Clones - IWSC (held during ICSE'12). June 4, 2012, Zurich, Switzerland. p. 15-21. [IEEE](#)
- Chatterji, D., Carver, J., Massengill, B., Oslin, J. and Kraft, N. "Measuring the Efficacy of Code Clone Information in a Bug Localization Task: An Empirical Study." Proceedings of the 5th International Symposium on Empirical Software Engineering and Measurement (ESEM 2011). Banff, Canada. Sept. 22-23, 2011. p. 20-29. [IEEE](#) [ACM](#) [DL](#)
- Carver, J., Chatterji, D. and Kraft, N. ACM DL Author-ize service "On the Need for Human-based Empirical Validation of Techniques and Tools for Code Clone Analysis." Proceedings of the 5th International Workshop on Software Clones (held during ICSE'11). May 23, 2011, Waikiki, Honolulu, Hawaii. p. 61-62. [ACM](#) [DL](#)
- Chatterji, D., Massengill, B., Oslin, J., Carver, J. and Kraft, N. "Measuring the Efficacy of Code Clone Information: An Empirical Study." Proceedings of the Evaluation and Usability of Programming Languages and Tools (PLATEAU)

Submitted Journal Papers

Clone Research Community Beliefs about Code Clones and Developer Behavior - Two Surveys. Debarshi Chatterji, Jeffrey C. Carver, Nicholas A. Kraft – University of Alabama

Short Abstract: This paper describes the results of two surveys that gauged agreement among clone researchers' personal views regarding invalidated literature claims about clone management, detection, and other key topics. Technical report available at:

<http://software.eng.ua.edu/reports/SERG-2013-01>

Journal Papers under progress

Ambiguous Definitions of Code Clones. Debarshi Chatterji, Jeffrey C. Carver – University of Alabama

Short Abstract: There are fundamental ambiguities pertaining to code clone definitions. Researchers have been working on detecting code clones since a long time now; however, the community still seems to be divided on the fundamental definitions of clones and their taxonomies. This paper presents a systematic literature review aimed at summarizing the definition of code clones in the literature. This paper showcases 39 papers to integrate the information regarding definition of code clones motivated towards reducing the definitional vagueness of code clones. Further, this paper attempts to find a relation between types of clones and intent of clone formation. Relation between developer intent of cloning and taxonomy of clones is aimed at fueling further research towards revelations in the field of clone management.

Empirical Human-Based Validation of Code Clone Maintenance. Debarshi Chatterji, Jeffrey C. Carver, Nicholas A. Kraft – University of Alabama

Short Abstract: This paper attempts to validate claims regarding developer behavior during code clone maintenance using human-based empirical studies. The primary motivation is to understand the conditions and factors related to clone maintenance in software systems.

Conference Papers under progress

Developer Intention of Cloning Code - A Taxonomy Based on Intent and Rationale. Debarshi Chatterji, Jeffrey C. Carver, Nicholas A. Kraft – University of Alabama

Short Abstract: Many researchers have studied the positive and negative effects of code clones on software quality. However, little is known about the intent and rationale of the developers who clone code. Studies have shown that reusing code is a common practice for developers while programming, but there are many possible motivations for and approaches to code reuse.

Although we have some ideas about the intentions of developers when cloning code, comprehensive research is needed to gather conclusive evidence about these intentions. In this paper we investigate developer intention when cloning code and managing cloned code by interviewing developers in a local organization to gather their impressions.

OTHER INFORMATION

Notable Awards

2012 · Best Technical paper at the International Workshop on Software Clones (IWSC'12).

Reviewer/Sub-reviewer

2013 · ESEM, ISSRE
2012 · ESEM, ISSRE, IWSC, ACM Southeast
2011 · ESEM
2010 · ESEM

PC-Member

2012 · 50th ACM Southeast Conference

*Paper
Presentations*

2013 · WCRE - Effects of Cloned Code on Debugging: A Replicated Developer Study.

2013 · IWSC - Cloning: The need to understand developer intent.

2010 · PLATEAU - Measuring the Efficacy of Code Clone Information: An Empirical Study.

References

Available on request.

August 4, 2014