FEAST 2017: The Second Workshop on Forming an Ecosystem Around Software Transformation

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ABSTRACT

The Second Workshop on Forming an Ecosystem Around Software Transformation (FEAST 2017) is held in conjunction with the 24th ACM Conference on Computer and Communications Security (CCS 2017) on November 3, 2017 in Dallas, Texas. The workshop is geared toward discussion and understanding of several critical topics surrounding software executable transformation for improving the security and efficiency of all software used in security-critical applications. The scope of discussion for this workshop includes topics that may be necessary to fully exploit the power and impact of late-stage software customization effort.

CCS CONCEPTS

• **Security and privacy → Software reverse engineering**; *Software security engineering*; • **Software and its engineering →** *Software maintenance tools*; *Software verification and validation*;

KEYWORDS

Software transformation, binary code, security, debloating

1 INTRODUCTION

Typical software engineering methodologies are largely focused on programmer productivity and their methods have been known to introduce significant execution inefficiency as a side effect. Recent work investigating efficient and timely software has attempted to enhance software execution efficiency while preserving the source code-level abstractions and object-orientation that enhance a programmer's productivity.

Such efforts seek to undo the side effects on security and performance overhead by reclaiming software execution efficiency and reducing indirection, as well as performing automatic program de-layering and program specialization (de-bloating). Several promising results from these efforts have demonstrated their viability in improving program execution efficiency as well as reduction of the cyber security attack surface. As a result, the community may benefit by investing in the development of tool ecosystems to take advantage of this recent progress, to mature the technologies, and determine how best to transparently deploy them.

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Despite some early progress within the research community, software executable transformation is not a solved science. Some critical problems reverse engineering and binary understanding are, in the general case, undecidable. Various automated tools and ecosystems will need to be investigated and developed to guarantee the effectiveness and correctness of transformation efforts and to enhance and ensure the security of transformed software. The FEAST workshop aims at forming an ecosystem Around Software Transformation.

2 TOPICS

The FEAST workshop will provide a forum for researchers to share ideas and development on software transformation. It includes topics geared toward:

- Understanding issues of software executable transformation for various programming languages and environment, and the potential methods for alleviating those issues.
- Identification of tools to be investigated and developed for guaranteeing correctness, enhancing security, and enabling non-critical/undesired feature removal.
- Identification of layers and areas of computing systems that are suitable for and can benefit from software customization/transformation, along with identification of associated challenges and constraints, and the particular adaptation to the methodology needed to operate within the identified areas.
- Automated extraction of models from software executables that are amenable to formal methods analysis and verification.

3 FORMAT

Submissions should be in two-column, 10-point format, and can be up to 6 pages in length with as many additional pages as necessary for references.

4 REVIEW PROCESS

All accepted papers received two to three double-blind reviews. We would like to thank all PC members and external reviewers for their contributions.

5 INVITED SPEAKERS

The workshop has two invited talks on XXX and YYY. The invited speakers are

- X and
- Y.

6 WORKSHOP ORGANIZATION

Program Committee Chairs

- Taesoo Kim, *Georgia Tech*
- Dinghao Wu, *Penn State University*

Program Committee Members

- Kevin Hamlen, *UT Dallas*
- Wenkee Lee, *Georgia Tech*
- Zhiqiang Lin, *UT Dallas*
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- Harry Xu, *UC Irvine*
- Daphne Yao, *Virginia Tech*

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