#### Probabilistic Inference of Data Abstractions in Machine Code

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## 1 Introduction

Our problem and motivation

## 2 Overview

Our solution in general terms

# 3 Related work

Related work

Early work that finds static library code using hash collisions [1]. Introduction to pointers, arrays, and recursive structures in binary [2].

Closest to our technique: pick fingerprints, calculate similarities [3].

Uses similar code region normalization; relies on approximate hashing instead of fingerprints for similarity [4]

Recent survey covering variety of methods to find similar code segments [5]

## 4 Current status

Current status of our project

## 5 Future work

Next steps in our project

# References

- [1] M. V. Emmerik, "Identifying library functions in executable files using patterns," in *Australian Software Engineering Conference (ASWEC '98)*, pp. 90–97, IEEE Computer Society, 1998.
- [2] A. Mycroft, "Type-based decompilation (or program reconstruction via type reconstruction)," in European Symposium on Programming (ESOP '99) (S. D. Swierstra, ed.), vol. 1576 of Lecture Notes in Computer Science, pp. 208–223, Springer, 1999.
- [3] R. Smith and S. Horwitz, "Detecting and measuring similarity in code clones," in *International Workshop on Software Clones (IWSC 2009)*, Computer, pp. 28–34, 2009.
- [4] A. Sæbjærnsen, J. Willcock, T. Panas, D. J. Quinlan, and Z. Su, "Detecting code clones in binary executables," in *International Symposium on Software Testing and Analysis (ISSTA 2009)* (G. Rothermel and L. K. Dillon, eds.), pp. 117–128, ACM, 2009.
- [5] C. K. Roy, J. R. Cordy, and R. Koschke, "Comparison and evaluation of code clone detection techniques and tools: A qualitative approach," *Science of Computer Programming*, vol. 74, no. 7, pp. 470–495, 2009.