Summary
An Infrastructure for Adaptive Dynamic Optimization

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1 To be completed before class

What are the problems solved by this paper? (50 words)
Dynamic Optimization is being used to overcome the difficulties encountered in static compilation but there are a few dynamic optimization frameworks. The proposed framework should be lightweight and efficient for further optimizations.

What are the approaches attempted by this paper? (50 words)
The authors propose an interface for building external modules to the DynamoRIO dynamic code modification system. The interface can be used for other operations like instrumentation, profiling, dynamic translation, etc. The light weight is achieved by restricting optimizations to streamlined code segments and using adaptive levels of details for representing instructions.

What are the main conclusions of this paper? (50 words)
The authors implement the proposed API and use it to perform optimizations like redundant load removal, strength reduction, processor specific optimizations and indirect branch predictions which improved the average performance of SPEC benchmarks over the base DynamoRIO implementation by 12%.

2 To be completed after class

Did this paper address an important issue? Explain. (100 words)

Are the proposed approaches valid? Describe its strength and weakness. (100 words)

Do the results support the conclusions? Explain. (100 words)

Describe the potential future works? (100 words)