

A Complement Note for Deduce

Zhongchao Yu

What is it?

- A dynamic invariant finder
- An error detector
- A debugging tool

Areas of Applications

- Programs which work on most cases but fail on a few
- Components in which small changes cause other components to fail in a large system
- Programs which crash after running for a long time
- Simulators the correctness of whose result is hard to judge
- Detecting anomalies in servers

Working Flow

- Instruments the original code (Java byte code)
- Watches the data
- Develops a model of the data
- Reports detected anomalies
- Relaxes properties and continues

Limitations

- Heavily associated with the binary representation of integers and of little use for floating point numbers
- Only works for Java at present

C Extension

- <http://suif.stanford.edu/~courses/cs343/finals/extending-DIDUCE.ppt>
 - Basic idea: use modified version of *gcc*.

Other References

- <http://sourceforge.net/projects/diduce/> (seems not active yet)
- <http://suif.stanford.edu/~courses/cs343/diduce/doc/>
- <http://www.sourceforge.net/projects/bcel>