## Machine Assertions

Human generated assertions were found to be superior to generated
- this is probably still true
- assertion generation is hard

What are automated tests good at?
- excellent for coverage
- generate generic assertions
- mutant generation can help

## Effectiveness

Is there an upper bound on the usefulness of assertions?
- there is a limit on what you can assert for a given method
- some have many hundreds of assertion! some only need few
- Research Question: is there a correlation between # of assertions per case and test effectiveness

## Mutation Testing

Works better as a meta-testing techn.
- off-by-one, typos
- automatically generated
- only starting to come into industry

# Test Suite Effectiveness

with Ali Mesbah

## Teaching/Learning

How do we communicate these lessons with students?
Can automated test assertions help inexperienced devs?
- automation is not a replacement for experience
- teach testing as part of introductory education

## Security Testing

How do we test for security?
- software testing is for functional testing
- security is a non-functional property of systems
- rely on specific domain experts

## Generalizability

The paper studies Java. do the findings translate?
- probably, but it's not been shown yet.
- all testing frameworks contain assertions

## Assertion Type

Some types of assertions seem to be more effective.
- After more research, the correlation was not found