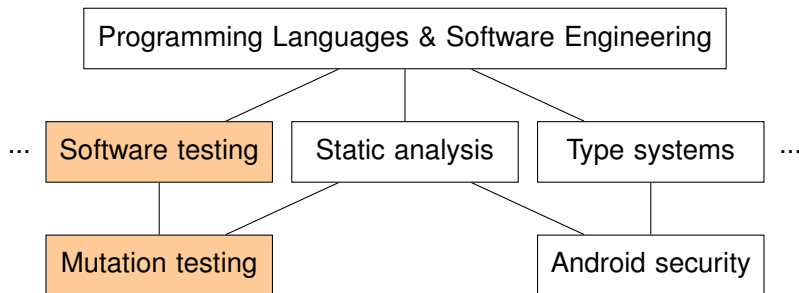


# Overview



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# Research interests: Mutation testing

## **Correlation between mutants and real faults**

- Are mutants a valid substitute for real faults in testing and debugging research?
- Are commonly used mutation operators sufficient?

## **Major mutation framework**

- Efficient mutation testing framework for Java programs
- Compiler-integrated mutator
- Domain specific language to configure mutation process
- Mutation analysis back-end for JUnit tests

# Research interests: Mutation testing

## **Efficient mutation analysis**

- Identify non-redundant, subsumed, and trivial mutants
- Monitor, propagate, and partition infected execution states
- Prioritize test suites based on runtime

## **Equivalent mutant problem**

- Use compiler optimizations to avoid equivalent mutants
- Solve state infection constraints to detect equivalent mutants

# Workshop goals

## **New domains for mutation testing**

- What are the next domains for mutation testing?
- How can we define mutation operators for new domains?

## **Acceptance of mutation testing**

- What are the open challenges to achieve greater relevance?
- Do we need better tool support for practitioners?