TWC: Small: Benchmarking Testing Methods for Access Control Policies
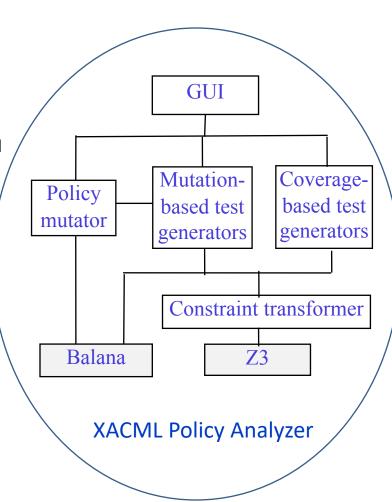
UMKC
UNIVERSITY OF MISSOURI
KANSAS CITY

Challenge:

- The testing methods for XACML have a poor record in fault detection. There is no explanation
- The evaluations of testing methods rely on controlled experiments. They do not demonstrate the inherent strengths and limitations

Solution:

- Formalize fault detection conditions for evaluating the ability of testing methods
- Exploit fault detection conditions to generate near-optimal test suites

Scientific Impact:

- Qualitative evaluation of testing methods to determine the types of faults they can and cannot detect
- Evaluations of cost-effectiveness of testing methods by using near-optimal test suites
- Testing can show absence of bugs in XACML policies

Broader Impact:

- An exemplar study on benchmarking of testing methods
- An open source implementation of XACML policy analyzer
- Involvement of undergraduate in research

XACML Policy Analyzer