Program Analysis for Developers

Name of course: Developers for Analysis

Semester: First semester

Course number: 236801

Semester: Spring '13

Instructor: Shlomi Zichron

Lecture hours: 32

Practice hours: None

Prerequisites: Logic

Course description:

The seminar aims to review developmental tools central to the field of software analysis in the past three decades, with a focus on their applications in modern development tools. The topics include:

- Symbolic execution (cilobmys ioisucybe, dbueBiB lbBim sniscyec),
- Verification using TASS obBumb Sniboyic,
- Testing during runtime,
- Automated testing,
- Code analysis.

The use of these techniques improves the capabilities and automation of computer programs, aiming to lead to more stable, reliable, and efficient systems.

Requirements:

Attendance is mandatory. Reading and presentation of 1-2 academic articles. Discussion of questions and answers about the presented topic. Submission of a summary (one page) as presented in the articles and discussion.

References:


Clarke, I.a. a program testing system. in Proceedings of the 1976 Annual Conference, 488–491.

de Moura, L. and Bjørner, N. “Z3: An Efficient SMT Solver”

Nieuenhuis, R. and Oliveras, A. “Solving SAT and SAT Modulo Theories: From an Abstract Davis–Putnam–Logemann–Loveland Procedure to DPLL(T).”


Chipounov, V., Kuznetsov, V. and Candea, G. “S2E: A Platform for In-Vivo Multi-Path Analysis of Software Systems”

Babic, D. and Hu, A. J. “Calysto: Scalable and Precise Extended Static Checking”


Anand, S., Godefroid, P., Tillmann, N. “Demand-Driven Compositional Symbolic Execution.”


