Coevolutionary Automated Software Correction

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Funding Sources:
Missouri S&T Intelligent Systems Center (ISC), Missouri S&T OURE program

Project Description:
Software testing and resulting error location and correction is a time consuming process. Test automation is only a partial solution. The Coevolutionary Automated Software Correction (CASC) system addresses in an integral and fully automated manner the complete cycle of testing, error location, and correction phases. It employs a coevolutionary approach where software artifacts and test cases are evolved in tandem. The test cases evolve to better find flaws in the software artifacts and the software artifacts evolve to better behave to specification when exposed to the test cases, thus causing an evolutionary arms race. One of the major challenges in this project is scaling the system up in order to be able to correct real-world software artifacts rather than just small artificial ones. For more details, see the project website at: http://web.mst.edu/~tauritzd/nc-lab/casc.html

Publications: